REPORT RESUMES

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NONFARM AGRICULTURAL EMPLOYMENT IN LOUISIANA WITH IMPLICATIONS FOR DEVELOPING TRAINING PROGRAMS.

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THE COMBINED RESULTS OF THE STUDIES OF SEVEN METROPOLITAN CENTERS AND 90 SEMI-URBAN AND RURAL TOWNS IN LOUISIANA SHOWED (1) THE NUMBER OF PEOPLE EMPLOYED, NUMBER NEEDING AGRICULTURAL COMPETENCIES, EXPECTED NUMBER TO BE HIRED, AND NUMBER OF JOB TITLES, (2) CHARACTERISTICS OF EMPLOYEES SUCH AS AGE, EDUCATION, BACKGROUND, AND SALARY, AND (3) AGRICULTURAL COMPETENCIES NEEDED TO ENTER, CONTINUE, AND ADVANCE IN THE FIRMS. IN 2,430 BUSINESSES AND AGENCIES SURVEYED, 51,719 WORKERS WERE EMPLOYED OF WHICH 20,025 IN 1,699 JOB TITLES NEEDED AGRICULTURAL COMPETENCIES. JOB TITLES WERE EXPECTED TO INCREASE BY 9.5 PERCENT WITHIN 5 YEARS. THE GREATEST NUMBER OF WORKERS WERE IN THE OCCUPATIONAL FAMILIES (1) CROPS, FORESTRY, AND SOIL CONSERVATION, (2) FARM SUPPLIES AND EQUIPMENT, (3) LIVESTOCK AND POULTRY, AND (4) AGRICULTURAL SERVICES, AND IN THE SEMISKILLED MANAGERIAL, SKILLED, AND SALES EMPLOYMENT LEVELS. TECHNICIAN LEVEL EMPLOYEES RANKED SEVENTH IN TOTAL NUMBER OF WORKERS AND WERE MOST NUMEROUS IN AGRICULTURAL SERVICE. MOST EMPLOYERS REQUIRED A MINIMUM JOB-ENTRY AGE OF 23 AND A HIGH SCHOOL EDUCATION FOR ENTRY INTO THE OCCUPATIONS, AND MOST PREFERRED A FARM BACKGROUND FOR A MAJORITY OF THE POSITIONS. OTHER FINDINGS CONCERNED PROMOTION, PREREQUISITE EDUCATION, AGRICULTURAL COMPETENCIES, INSERVICE TRAINING, LICENSING, GROWTH, AND SUPPLY. TEN RECOMMENDATIONS CONCERNED CURRICULUM CHANGES, WORK EXPERIENCE, CONTINUING EDUCATION, SCHOOL RESPONSIBILITY FOR JOB PLACEMENT AND FOLLOWUP, AND RESEARCH AND DEVELOPMENT. AREA AND OTHER RELATED STUDIES ARE REPORTED IN VT 004 783 - VT 004 787. (JM)

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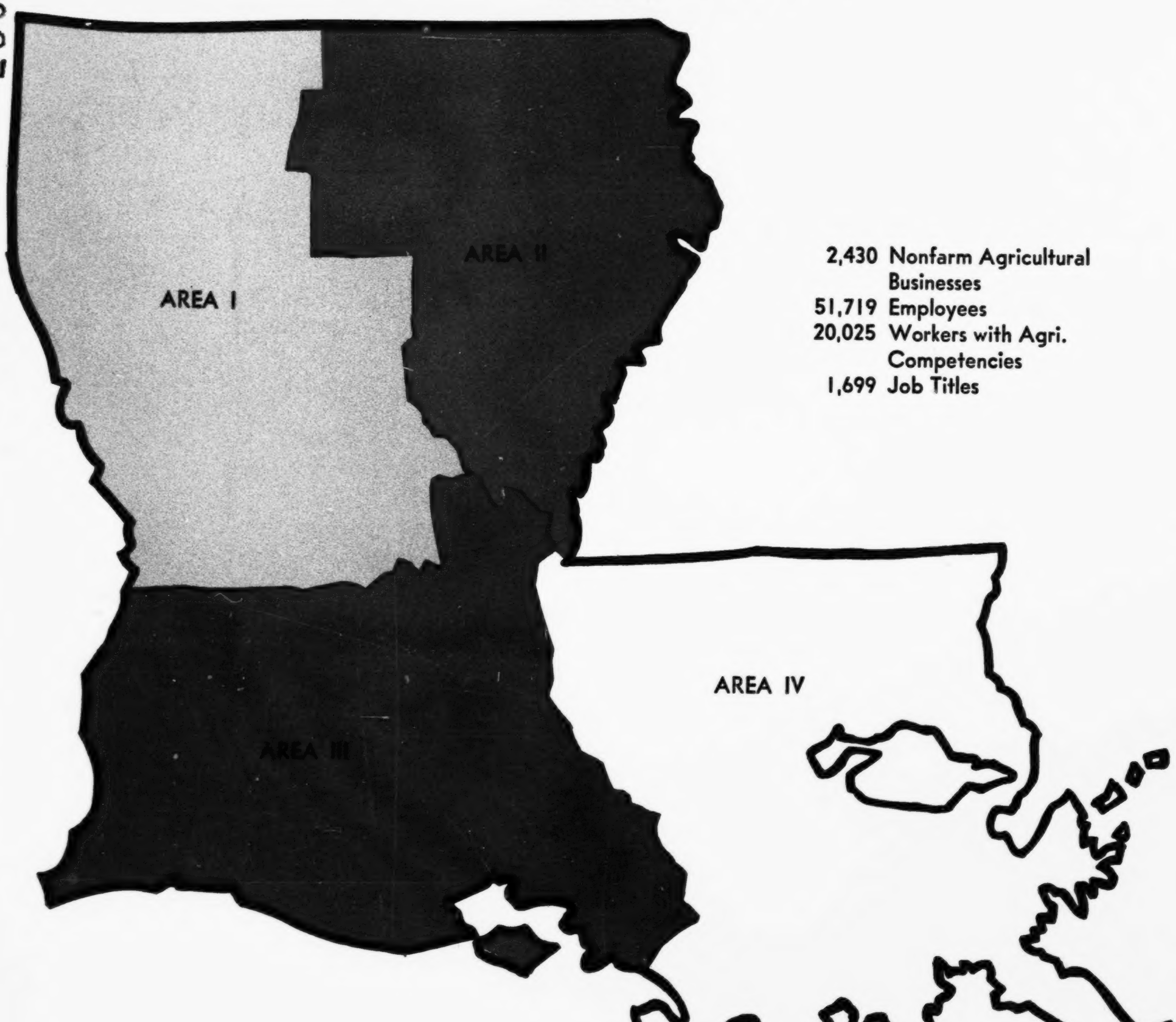
Cooperative Research Project
OE 5-85-040



2,430	Nonfarm Agricultural Businesses
51,719	Employees
20,025	Workers with Agri. Competencies
1,699	Job Titles

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School of Vocational Education
College of Agriculture
Louisiana State University
Baton Rouge

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C. M. Curtis

DEPARTMENT OF VOCATIONAL AGRICULTURAL EDUCATION

SCHOOL OF VOCATIONAL EDUCATION

COLLEGE OF AGRICULTURE

LOUISIANA STATE UNIVERSITY

June, 1967

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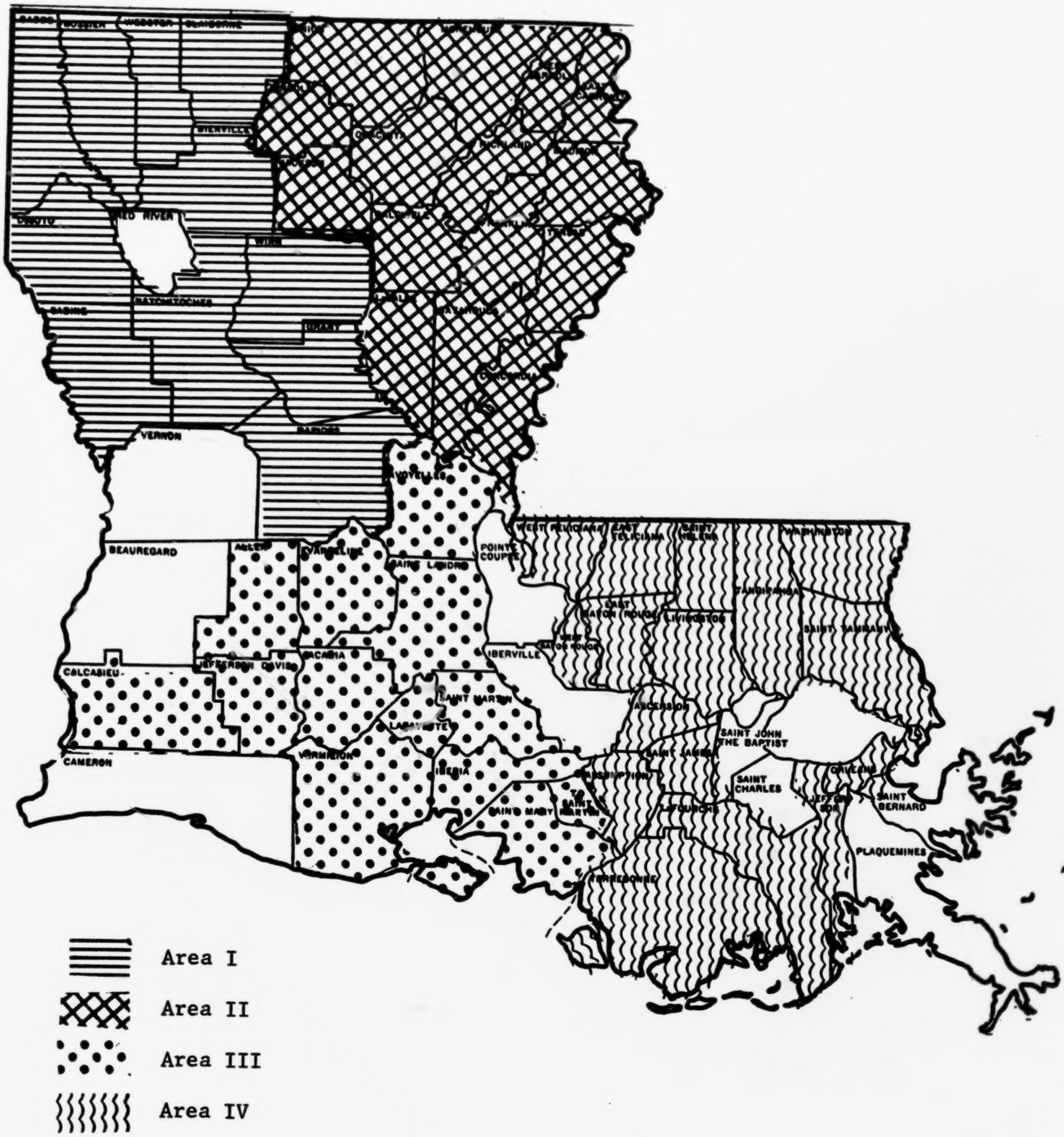
SCOPE OF STUDY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ORLEANS
JEFFERSON
SAINT BERNARD
SAINT MARY
SAINT MARTIN
LAFOURCHE
PLAQUEMINES
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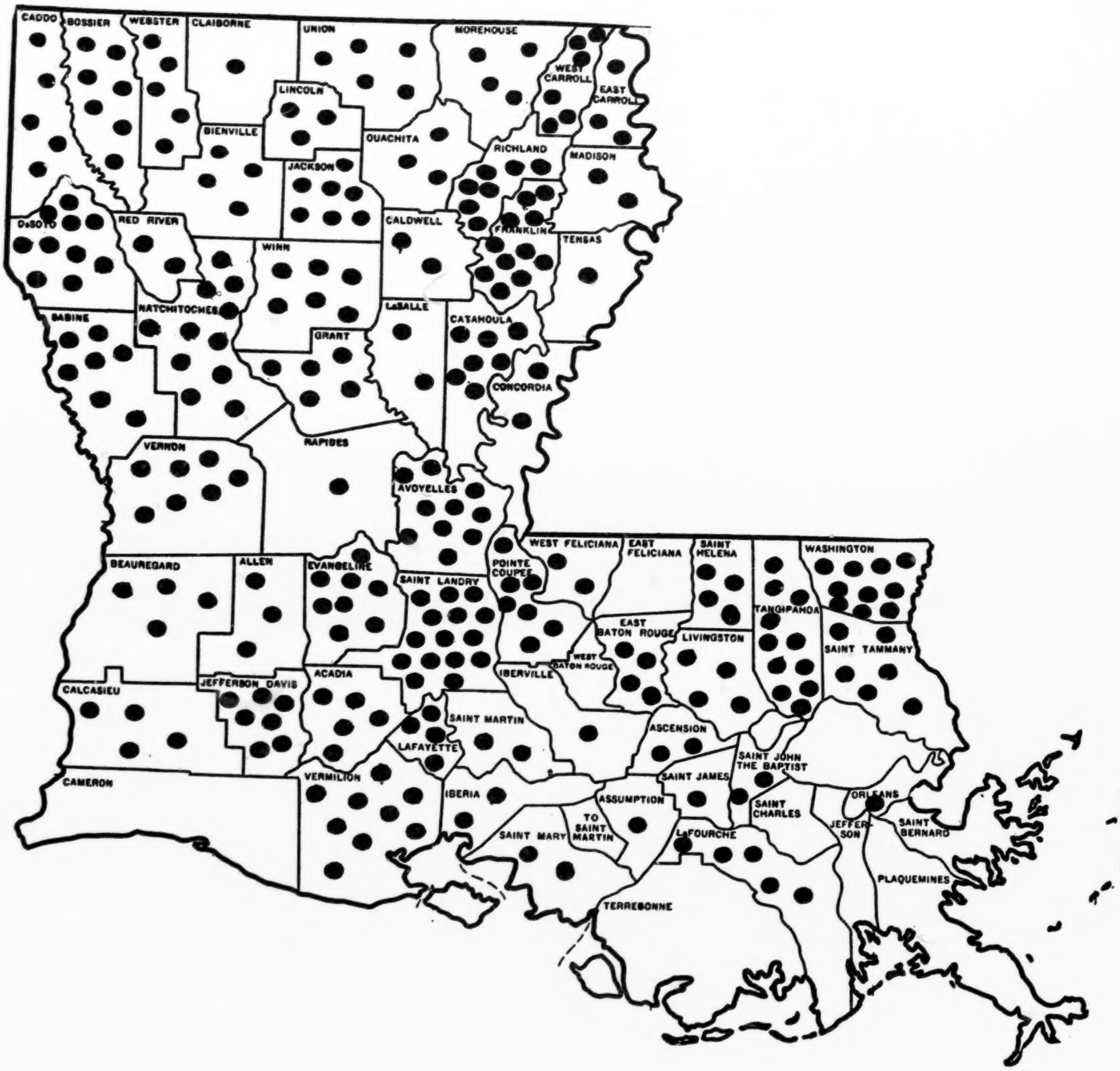
VOCATIONAL AGRICULTURE DEPARTMENTS
IN LOUISIANA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INTRODUCTION OF THE STUDY

Rural boys are constantly under pressure to improve their chances for finding and pursuing a satisfactory career. For them proper choice of an occupation is a very special problem, demanding unusual treatment. They face career barriers not common to other youth, for more than one-half of them must migrate to populated centers to seek occupational opportunities. There -- on the home grounds of better prepared youth -- they must compete for suitable careers.

Fortunately, most rural boys have a "built-in" vocational advantage, providing they choose among the great host of occupations available to them in agriculture. Their apprenticeship on the farm is the key to the edge they hold over others having similar career aspirations.

Actually, growing up on the farm gives a boy a head start towards an occupation. It provides him with an occupational background the city boy can't acquire -- an understanding of farm and rural life. For, farm experience is definitely preferred to hold thousands of different jobs that have connections with farming. Moreover, knowledge and skill in agricultural subjects acquired above the apprenticeship level have real market value in the work world.

Clearly, it is to the interest of the national economy not to let farm know-how and experience go to waste.

Unquestionably, there is no more satisfying life than being a farmer -- 40 acres, a horse, a milk cow and a gun constituted the first great American dream. If a boy wants and can farm -- has the necessary land and capital or can get it -- then he certainly ought to farm, for his production can be vastly important to the general welfare.

But, the simple truth is that relatively few rural boys can become owners and operators of successful farms. Logically, the rest of them -- those who must plan a lifetime away from the farm -- should be encouraged to use their occupational assets most effectively -- in agricultural careers that are farm connected.

Agriculture in the state and nation has experienced startling developments at amazing speeds. Advancing farm technology and mechanization, in addition to the use of petro-chemicals in plant and animal protection, have combined to make possible greater production with fewer farm workers. Moreover, specialized production has followed the constant pressure for the substitution of capital for labor. As a consequence, farmers have grown more dependent upon others besides farm laborers, as their operations grow larger and more complex.

Agricultural communities now tend towards urban-country communities having greatly diversified but common interests--the production, processing and marketing of farm products. Farmers now look to a battery of businesses and agencies in town to service their production requirements, while still another group of town concerns look to the farmers for raw products to process and market.

This is but a portion of the long and consistent pattern of change in farming, including the substitution of increasing amounts of capital for labor, larger and fewer farms with more specialization, the movement towards more mechanization, and the use of petro-chemical products in farm production.

Emerging in towns and cities, along with changes on the farm, is a large and growing segment of the economy known as nonfarm agricultural business, a vital part of the agricultural industry. It offers proof that advancing technology does not necessarily result in a new loss of jobs, but actually creates new jobs and occupations which require workers with new skills. Undoubtedly, many people of both sexes who have left the farm can be found employed in urban areas by businesses engaged in servicing the farmer or handling his products.

Unfortunately, little information has been available showing actual numbers employed, the jobs held, worker qualifications and compensation, along with the kind and number of employing concerns involved.

Yet, generally, it is known that occupations connected with farming are increasing, as farm workers decrease. The business of handling farm machinery and equipment serves to illustrate this development: tractors and tractor equipment save countless man hours on the farm, but many knowledgeable workers are required off the farm to design, manufacture, distribute and service these machines.

It is towards these kinds of jobs that great numbers of youth leaving the farm may wisely direct themselves, assuming that they will obtain the considerable amount of education and training required for job entry and progress, for jobs in nonfarm agricultural businesses are distinctive and require workers to function predictably.

Adjusting human resources on the farm to the needs of agriculture is a major problem of the middle 1960's and the decade ahead, principally because the farm has more youth than can be profitably employed as adults. Estimates indicate that in the decade ahead, only one commercial farm will be available for each 10 farm reared boys reaching maturity.

A logical solution to the problem lies in efforts to step up occupational training to include retraining and guidance programs at the high school level so excess farm-reared youth may move into occupations offering them the best opportunity to "cash-in" on their farm experience. Logically adjusting the educational system for rural youth to provide them with the necessary occupational training to meet the requirements of modern agriculture is a process that must take into account the occupations making up the nonfarm sectors of the economy.

This need to identify jobs in nonfarm agriculture has long existed, together with training programs at the high school level to prepare farm youth for them. Appreciable acknowledgment of the need was made in December of 1963, when the State Board of Liquidation of the State Debt agreed to underwrite a survey of nonfarm agricultural occupations in the major metropolitan areas of the state.

These areas were found to contain 1,067 businesses and agencies considered a part of the agricultural economy. Together they employed 30,300 workers, and of this number 9,087 were required to have agricultural competencies relating to 1,582 different job titles

Agricultural jobs of even more importance to farm youth are those located nearest to them -- those in agricultural businesses and agencies located outside the metropolitan areas in the host of the more rural centers of population. Moreover, occupational opportunities in nonfarm agriculture offered by agricultural concerns located in the towns and villages of the state may equal or even exceed those in the metropolitan areas. The chief concern of this study was to identify and describe all nonfarm agricultural jobs in both city and village.

Design of the Study

This research grew out of provisions of the Morse-Perkins Act (P.L. 88-210) which relate specifically to vocational agriculture and job training.

> ...any amounts (money) allotted for vocational agriculture may be used for vocational education in any occupation involving knowledge and skill in agricultural subjects...; and
>
> ...(provide) vocational education which is realistic in the light of actual or anticipated opportunities for gainful employment...suited to the ... needs, interests and ability to benefit from such training...

Clearly, these provisions encourage the development of new programs in vocational agriculture, leading to careers in agriculture other than farm production -- that the traditional program, to train for proficiency in farming occupations, must give way to more comprehensive training made up of several courses of study; all in preparation for agricultural careers but involving different agricultural knowledge and skills.

Equally clear in the Act is the provision defining the quality of training to be provided -- that it be realistically geared to actual job opportunities and offered to those who have the interest, need and ability to profit from such training.

Presumably, there is a place in agriculture for farm youth who wish to remain within the general framework of the industry, but are unable to or do not aspire to farming as a career. Where this place is and what it will take in the way of education and training to get there is a major concern of this research.

The Problem

This research was designed to discover nonfarm agricultural jobs in Louisiana, to identify the agricultural competencies they require, and to classify them by occupations or clusters for use as bases for developing programs in vocational agriculture. More specifically the objectives were:

1. To identify and describe present and emerging agricultural occupations, other than farming and ranching, for which knowledge and skill in agriculture is a requirement for job entry;
2. To develop job title descriptions for titles found in all nonfarm agricultural occupational families;
3. To cluster or categorize job titles according to major sectors of nonfarm agricultural occupational families;
4. To develop suggested training programs for use in vocational agriculture classes having students with occupational objectives in nonfarm agriculture;
5. To demonstrate and evaluate training programs in pilot centers at the high school level;
6. To develop leadership in vocational education, especially in the service of vocational agriculture.

The research takes into account the great diversity of Louisiana agriculture which offers a wide variety of occupational opportunities involving equally diverse agricultural knowledge and skill and makes necessary a number of different training programs in vocational agriculture. Hence, to gain the key factors required for developing new and more timely training the research was conducted statewide, approximating 100 per cent of the nonfarm agricultural businesses and agencies having workers with agricultural competencies.

The scope of the research attempted required a two-phase approach; first, a survey of nonfarm agricultural businesses and agencies located in the seven metroploitan areas of the state, and second, repeating the survey in the smaller towns and cities of the state.

A grant of $25,000 from the State Board of Liquidation of the State Debt funded Phase One, while a grant of $94,000 from the U. S. Office of Education, 4 (c) funds, funded Phase Two under contract number OE 5-85-040.

Research conducted under Phase One was reported under Agricultural Education Series Numbers 4, 6, 7, 8, 9, 10, 11, and 12, Louisiana State University, Baton Rouge, Louisiana. This report combines Phases One and Two, giving statewide coverage of nonfarm agricultural occupations in Louisiana.

Procedure

Both Phases One and Two of the study were descriptive, using the survey method and the interview technique for obtaining needed information. The selection of metropolitan areas to include in Phase One was effected by general acknowledgment of areas in Louisiana considered to be metropolitan: Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans, and Shreveport.

Some 90 smaller towns and villages -- those within or adjacent to educational centers having vocational agriculture programs -- were covered by Phase Two.

Firms to be surveyed in each area included in the study were determined by state and local Employment Security Divisions, Chambers of Commerce, the Yellow Pages of the telephone directories, and the local agricultural instructor. No concern was overlooked where one or more workers were required to have agricultural competencies in job performance.

For Phase Two the sample of 90 towns and villages indluded a total of 1,363 businesses and agencies having workers with agricultural knowledge and skill. Total employment amounted to 21,419 workers, with 10,938 using agricultural knowledge and skill in job performance.

The total sample, both Phase One and Two, contained 2,430 nonfarm agricultural concerns having 51,719 workers, with 20,025 required to have knowledge and skill in agricultural subjects. These workers were distributed over a total of 1,699 different job titles, each involving specific knowledge and skills in agricultural subjects.

The survey of agricultural firms located in the metropolitan areas was effected by interviewers employed and trained by University personnel, using facilities and resources supplied by the Division of Employment Security. Two interview schedules were prepared, A and B, for purposes of identifying job titles and needed competencies for job entry. Both schedules* were pretested under actual field conditions -- they are placed in the Appendix. In design, they follow general patterns developed at the National Center in Columbus, Ohio.

Job titles in a particular concern were identified and defined by management, along with the agricultural knowledge and skill required for entry and advancement.

Firms involved were classified according to eight categories, or occupational families:

Farm Machinery Sales & Service
Farm Supplies & Equipment
Livestock & Poultry
Crops, Forestry & Soil Conservation
Ornamental Horticulture
Wildlife & Recreation
Farm Service
Agricultural Service

---

*See Appendix A.

Job titles were classified according to levels of employment:

Professional
Technical
Managerial
Supervisory
Sales
Office
Skilled
Semiskilled
Unskilled

Phase Two, the survey of nonfarm agricultural firms in the 90 smaller towns and villages of the state, was accomplished with the aid of 186 local teachers of vocational agriculture, plus the four research associates assigned to the project. Actual surveys were made by these teachers under the supervision of the research associates, who, along with the faculty in Agricultural Education, trained them in the use of the interview technique and the schedules employed.

Training sessions for the teachers were made a major part of an extension course, Agricultural Education 219, a problems course organized for that purpose, which extended over a period of 30 weeks when the surveys were made. Expenses incurred by the participating teachers were paid by the University, using both federal and state funds amounting to a total of $14,588.

State funds were supplied by the Vocational Division of the State Department of Education to augment federal funds provided for the Project Number OE 5-85-040.

Information gathered in Phase Two was treated in the same manner as in Phase One.

Treatment of Survey Information

Information obtained from 1,067 concerns surveyed in the metropolitan centers was combined with that obtained from 1,363 firms in the semi-urban and rural areas for a total of 2,430. Data were organized and presented under three general categories: (1) occupational families, (2) classification of job titles into levels of employment and training required in agricultural subjects, and (3) special requirements for job entry.

Descriptive statistical techniques were used in analyzing data. Simple frequency tabulations were employed to show job titles, levels of employment, educational levels associated with job entry, preferred residential background, farm experience and continuing education required for job advancement. Employee ages were presented by occupational family and level of employment in terms of average age of all workers, average minimum age for job entry, and average maximum age for entry. Salaries were reported according to medians by levels of employment in the various families.

Agricultural subject matter in which employees must be trained was indicated for each occupational family by employment level. Subject matter areas selected to show basic agricultural training required were: (1) Animal Science, (2) Plant Science, (3) Agricultural Business Management and Marketing, and (4) Agricultural Mechanics and Automation. At the time,each employer interviewed furnished the information about numbers of present and future employees in each job title in the business. A checklist of competencies (knowledge, skills and abilities) was completed separately for all job titles. For every item on the checklist the employer marked the degree of competency required of employees. Average competency ratings for employees were then computed according to levels of employment. Components of each subject matter area designed to determine specialized training needs was not treated in this report but will appear in a subsequent release.

Data obtained from the 2,430 businesses and agencies surveyed were grouped according to selected occupational families: (1) Farm Machinery Sales and Service, (2) Farm Supplies and Equipment, (3) Livestock and Poultry, (4) Crops, Forestry and Soil Conservation, (5) Ornamental Horticulture, (6) Wildlife and Recreation, (7) Farm Service, and (8) Agricultural Service.

Job titles identified were classified into occupational levels, taking into consideration duties and responsibilities as well as field of activity: (1) Professional, (2) Technical, (3) Managerial, (4) Supervisory, (5) Sales, (6) Office, (7) Skilled, (8) Semiskilled, and (9) Unskilled.

Data were analyzed in the Computer Center of Louisiana State University and Agricultural and Mechanical College, Baton Rouge, Louisiana.*

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*See Appendix B

PRESENTATION AND ANALYSIS OF SURVEY INFORMATION

The principal purpose of the study was to identify clusters of agricultural jobs found in agriculturally oriented businesses and agencies located in metropolitan, semi-urban, and rural areas of Louisiana, with particular emphasis on educational qualifications needed by prospective employees to effect satisfactory job entry. This analysis was made in an attempt to provide those engaged in education with a knowledge of present and emerging agricultural opportunities other than farming or ranching, which may be used for purposes of building curriculums in the public schools.

Occupational Families

Groupings, appropriate to the nature of product processed or service performed, were developed as a means of classifying agricultural businesses, industries and agencies. These clusters were called occupational families. Each one offered a wide range of occupations, according to variations in concerns making up the several families. Specific jobs contained within a family grouping may require similar yet different skills and abilities, depending upon the level of performance and the work to be done.

The 2,430 agricultural businesses and agencies were categorized in eight major occupational families. Identity of the individual concern was lost in classification. Types of firms, industries or agencies were shown under each family according to the following arrangement:

Farm Machinery Sales & Service
- Automation Equipment Co.
- Farm Machinery & Equipment Dealer
- Automobile Dealer
- Contractors Equipment Co.

Farm Machinery Sales & Service (cont.)
- Farm Implement Co.
- Cotton Picker Rebuilding Co.
- Farm Implement Manufacturer
- Farm Equipment Prefabricator

Types of Firms, Industries and Agencies (continued)

Farm Supplies & Equipment

- Hardware Store
- Fence Co.
- Department Store
- Feed & Seed Store
- Louisiana Agricultural Cooperatives
- Building Supply Store
- Dime Store
- Fertilizer Co.
- Wholesale Distributing Co.
- Agricultural Chemical Dealer
- Pet Market
- Garden Center
- Veterinarian Supply Co.
- Dairy Farm Equipment Dealer
- Farmers Co-op.
- Lumber Co.
- Marketing Co-op.
- Rice & Feed Mill
- Auto Supply Co.
- Motor Supply
- Blowpipe Co.
- Gin and Mill Supply Co.
- Butane Co.
- Spray & Equipment Co.
- Farm Store
- General Merchandise Co.
- Seed Co.
- Farm Supply
- Tire Service Co.
- Drug Store (Veterinarian Supplies)
- Forestry Equipment Dealer

Livestock & Poultry

- Slaughter House
- Butcher Shop
- Meat Market
- Egg Processing Co.
- Milk Distributorship
- Creamery
- Wholesale Meat Distributor
- Dairy Products Co.
- Boarding Stables
- Livestock Auction Barn
- Rendering Plant
- Poultry Market
- Packing Plant
- Soap Co.
- Hatchery
- Grocery Store
- Poultry & Egg Processing Co.

Livestock & Poultry (cont.)

- Poultry By-Products Co.
- Stockyard
- Frozen Food Locker
- Sausage Co.
- Louisiana State Milk Testing Div.
- Cattle Dealer Company
- Hide Company.

Crops, Forestry & Soil Conservation

- Louisiana Forestry Commission
- Fruit Exchange Co.
- Tree Service Co
- Logging Co.
- Produce Co.
- Rice By-Products Co.
- Coffee Co.
- Fruit Co.
- U.S. Forest Service
- Rice Mill
- Wood Preserving Co.
- Grain Co.
- Canned Food Co.
- Lumber Co. (sawmill)
- Tomato Co.
- Rice Dryer
- Timber Contractor
- Seed Dealer
- Cotton Warehouse
- Wood Yards
- Sugar Refinery
- Compress & Warehouse Co.
- Seed Cleaning Plant
- Syrup Mill
- Sweet Potato Co.
- Tree Nursery
- Veneer Company
- Stake Mill
- Craft Shop
- Fruit & Vegetable Market
- Feed Mill
- Oil Mill
- Pulpwood Co.
- Food Store
- Cotton Gin
- Cotton Brokerage Co.
- Paper Co.
- Planting Co.
- Sugar Co-op.
- Cotton Products Co
- Creosoting Co.

Types of Firms, Industries and Agencies (continued)

Crops, Forestry & Soil Conservation (cont.)

- Fruit Stand
- Cotton Division, Marketing Service
- Forestry Consultant Co.
- Irrigation Company
- Plywood Mill

Ornamental Horticulture

- Garden Center
- Nursery
- Florist
- Landscape Co.
- Wholesale Florist
- Horticulture Products Co.
- Florist Gift Shop
- Greenhouse

Wildlife & Recreation

- Golf Course
- State Park
- Riding Stable
- Taxidermist
- S.P.C.A.
- City Park
- National Park
- Playground
- Golf Course Service Co.
- La. Wildlife & Fisheries Com.
- State Park & Recreation Com.

Farm Service

- Welding Co.
- Machine Shop
- Electric Power Supplier
- Pest Exterminating Co.
- Artificial Breeding Assoc.
- Credit Associations
- Farmers Home Administration
- Radio Station
- Realty Co.
- Aero Farm Service
- Water Well Co.
- Auto Repair Shop
- Research Consulting Firm
- Building Contractor
- Livestock Brand Commission
- Television Station

Farm Service (continued)

- Insurance Co.
- Farm Service Laboratory
- Airplane Service
- Hay Harvesting Co.
- School Canning Center
- Small Motor Shop
- Sheet Metal
- Creosoting Co.
- Seeding and Sodding Co.
- Saw Repairing Co.
- Dragline & Bulldozer Service
- Cabinet Shop
- Concrete Co.
- Plumbing & Heating
- Canal Company
- Farm Service Laboratory
- Land & Timber Company
- Fertilizer & Lime Service
- Motor Repair Shop
- D.H.I.A. Supervisor
- Farm Dusting Co.
- Iron Works
- Land & Oil Co.
- Blacksmith
- Farm Bureau
- Farm Tractor Service

Agricultural Service

- Animal Hospital
- Veterinarian
- Agricultural Stabilization & Conservation
- State College
- Agricultural Extension Service
- State Dept. of Agriculture
- Vocational Agriculture Teacher
- State Market Commission
- State Dept. of Education
- Animal Disease Eradication (USDA)
- Bank
- State Land Office
- Levee Board
- Forestry Experiment Station
- Plant Pest Control (USDA)
- Federal Land Bank Association
- U.S.Air Force Base
- State Fair Association
- Experiment Station
- U.S. Dept. of Interior.

Number of Nonfarm Agricultural Concerns

This report combined data from 2,430 concerns. The study of seven metropolitan centers covered 1,067 establishments engaged in some type of agricultural business, while the 90 semi-urban and rural areas contained 1,363 agricultural concerns.

TABLE I

NUMBER OF AGRICULTURAL BUSINESSES, INDUSTRIES, AND AGENCIES GROUPED BY OCCUPATIONAL FAMILY, 1965 AND 1966

Occupational Family	State Metropolitan Summary	Area I	Area II	Area III	Area IV	Total State	Per Cent
Farm Machinery Sales & Service	38	26	35	53	24	176	7.3
Farm Supplies & Equipment	251	60	94	88	58	551	22.7
Livestock & Poultry	162	38	49	62	40	351	14.4
Crops, Forestry & Soil Conservation	152	48	98	78	18	394	16.2
Ornamental Horticulture	111	6	11	21	11	160	6.6
Wildlife & Recreation	29	2	12	3	0	46	1.9
Farm Service	178	31	87	52	25	373	15.3
Agricultural Service	146	22	94	86	31	379	15.6
Total	1,067	233	480	443	207	2,430	100.0

A trend evident throughout the nation was apparent in Louisiana in that a concentration of businesses were engaged in servicing production agriculture. The importance of service concerns in Louisiana becomes apparent when Table I is analyzed. Farm Supplies and Equipment, Agricultural Service, Farm Service, and Farm Machinery Sales and Service made up 60.9 per cent of the total number of businesses.

Actual processing of farm products into consumable commodities was limited largely to two families: Livestock and Poultry; Crops, Forestry and Soil Conservation. However, these fields also contain a large variety of occupations and specific jobs relating to the servicing of farmer needs.

Agricultural establishments were well distributed over the state with the exception of those under Agricultural Services. In this area a concentration in the metropolitan centers, largely in the form of state and federal agencies, was noted. An interesting observation centered around a heavy population of Farm Machinery Sales and Services in the southwest region of the state. The dimensions of agriculture in this section, led by the vast operations of the rice and sugar cane industries, accounted for this concentration.

The rank of occupational families according to number of establishments was as follows:

Farm Supplies & Equipment
Crops, Forestry & Soil Conservation
Agricultural Service
Farm Service
Livestock & Poultry
Farm Machinery Sales & Service
Ornamental Horticulture
Wildlife & Recreation

Special interest centered around the number of firms engaged in Ornamental Horticulture. The development of this phase of nonfarm agriculture was indicative of urbanization and increasing occupational opportunities provided in this area of service. Ornamental Horticulture businesses were concentrated in the metropolitan centers.

The development shown by concerns and agencies engaged in Wildlife and Recreation was equally significant. This growth includes public parks, golf courses, and wildlife conservation agencies at the state and federal levels. It is of special interest to farmers and landowners with land available for diversion into recreational tracts.

Number Employed in Nonfarm Agriculture

A total of 51,719 employees was found in the 2,430 agriculturally oriented businesses and agencies participating in the survey. Of this number 20,025, or 38.7 per cent, were required to have competencies in agriculture as a job requirement, with an expected increase to 21,999 in the next five years -- an overall rise of 9.8 per cent.

Data in Table II, indicating total employment in nonfarm agricultural firms, not only pointed up the economic importance of agriculture in Louisiana, but identified occupational possibilities other than farming where a general knowledge of agriculture was a requirement for job entry.

Occupational families, when ranked according to number of workers appeared as follows:

Crops, Forestry & Soil Conservation
Farm Supplies & Equipment
Livestock & Poultry
Agricultural Service
Farm Service
Farm Machinery Sales & Service
Wildlife & Recreation
Ornamental Horticulture

Generalizations drawn from data presented in Table II are listed below:

1. Since this survey was statewide, including metropolitan centers as well as semi-urban and rural areas, the need for agricultural training and skill may have been minimized in certain cases. Of the total 51,719 workers it was found that 20,025, or 38.7 per cent, needed to have knowledge and skill in agriculture to contribute positively toward their occupation. On the basis studies completed in other states this percentage is low.

TABLE II

NUMBER OF PERSONS EMPLOYED IN AGRICULTURAL BUSINESSES, INDUSTRIES, AND AGENCIES, AND NUMBER OF EMPLOYEES NEEDING AGRICULTURAL COMPETENCIES, BY OCCUPATIONAL FAMILY

Occupational Family	Total Number of Employees	Employees Needing Agricultural Competencies			
		Current Employment	Per Cent Current Employees Needing Agri. Competencies	Expected Employment Five Years Hence	Per Cent Increase Five Years Hence
Farm Machinery Sales & Service	3,038	1,828	60.1	2,248	22.9
Farm Supplies & Equipment	8,360	3,022	36.1	3,383	11.9
Livestock & Poultry	8,298	3,194	38.4	3,398	6.3
Crops, Forestry & Soil Conservation	17,040	6,061	35.5	6,390	5.4
Ornamental Horticulture	1,076	928	86.2	1,049	13.0
Wildlife & Recreation	1,641	373	22.7	437	17.1
Farm Service	5,631	1,844	32.7	2,082	12.9
Agricultural Service	6,635	2,775	41.8	3,012	8.5
Total	51,719	20,025	38.7	21,999	9.8

2. Even though Ornamental Horticulture ranked eighth among the occupational families in total number of workers, it was highest in percentage of workers (86.2) needing knowledge and skill in agricultural subjects in order to perform job requirements. This reflects the rapid development of the horticulture industry and the demand for trained workers to meet the mushrooming needs of persons in the large cities for professional advice and assistance in their landscaping problems.

3. Farm Machinery Sales and Service, while ranking sixth among the occupational families, was second in number of workers needing agricultural competencies. These data indicated the rapid growth of the agricultural machinery business and the extent of mechanization in production agriculture.

4. All eight of the occupational families were expected to grow in number of employees trained in agricultural subjects. Projected growth in employees during the coming five-year period ranged from a low of 5.4 per cent in Crops, Forestry and Soil Conservation, to a high of 22.9 per cent in Farm Machinery Sales and Service. The overall anticipated increase was 9.8 per cent.

A ranking of occupational families, according to numbers of workers needing agricultural competencies, was as follows:

Crops, Forestry & Soil Conservation
Livestock & Poultry
Farm Supplies & Supplies
Agricultural Service
Farm Service
Farm Machinery Sales & Service
Ornamental Horticulture
Wildlife & Recreation

Job Titles According To Occupational Families of Employment

The 20,025 workers serving in an agricultural capacity in the 2,340 establishments surveyed held 1,699 job titles, ranging in performance from the level of laborer to professional status.

In this study, a job title refers to a specific position held by a worker, or number of workers, who must have for satisfactory performance a knowledge and skill in agriculture of a particular nature.

TABLE III

NUMBER OF JOB TITLES IN AGRICULTURAL OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES

Occupational Family	Number of Job Titles			Number of Job Titles Five Years Hence	Per Cent Job Title Increase Five Years Hence
	Urban	Rural	Total		
Farm Machinery Sales & Service	41	70	111	135	21.6
Farm Supplies & Equipment	129	118	247	291	17.8
Livestock & Poultry	169	78	247	264	6.8
Crops Forestry & Soil Conservation	223	231	454	475	4.7
Ornamental Horticlulture	66	10	76	84	10.4
Wildlife & Recreation	40	25	65	67	2.7
Farm Service	124	94	218	238	9.0
Agricultural Service	206	75	281	308	9.6
Total	998	701	1,699	1,862	9.5

A detailed breakdown of job titles was shown for each of the occupational families, together with the number of workers in each job title.*

Crops, Forestry and Soil Conservation contained the largest number of job titles as well as the largest number of workers using a knowledge and skill in agricultural subjects. A ranking of families according to number of job titles appears below:

Crops, Forestry & Soil Conservation
Agricultural Service
Farm Supplies & Equipment
Livestock and Poultry
Farm Service
Farm Machinery Sales & Service
Ornamental Horticulture
Wildlife & Recreation

All of the families were expected to grow, adding 163 job titles over the coming five-year period. The anticipated increase in number of job titles implies additional occupational opportunities for youth in an expanding agricultural complex.

Each of the occupational families provided job titles in sufficient numbers to challenge the occupational interests of youth who indicate a desire to enter a nonfarm agricultural occupation. The growth trend indicated will make nonfarm agriculture in the state even more appealing to young people, particularly those with a rural background.

Levels of Employment by Occupational Family

Available job titles at the different levels of employment within an occupational family were closely related to the occupational opportunities available to young people in nonfarm agriculture. Level of employment was indicative of salary or wages that can be expected and formal education required, while the job title indicated lines of applied training to be given consideration.

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*See Appendix C.

Table IV indicates these levels of employment found within the eight occupational families.

Employees at the professional level were concentrated in the Agricultural Service, and Crops, Forestry and Soil Conservation families. These families required a large proportion of college graduates trained in agriculture.

Employees at the technical level were found primarily in Agricultural Service; Crops, Forestry and Soil Conservation; Farm Service, and Livestock and Poultry. The need for technicians is relatively recent, and opens new fields of opportunity for youth.

Managerial and supervisory levels shared the spotlight of importance as illustrated by the numbers serving in these capacities in the firms surveyed. Employees at these levels were well distributed in all the concerns and emphasized the need for workers whose training must cover a broad area in agriculture as well as business practices and principles.

All firms participating in the study employed salesmen who were required to have knowledge and skill in agriculture. The importance of salesmen to the agriculturally oriented business was illustrated by the large number employed in some of the families. In these families the growth and development of many of the businesses depend upon the ability of their salesmen. Sales personnel made up 9.7 per cent of the total workers having agricultural training.

An unexpected development was the large number of office personnel designated by employers as needing certain skills in agriculture. This level of employment made up 7.2 per cent of the total.

TABLE IV

TOTAL EMPLOYEES WITH AGRICULTURAL TRAINING, BY LEVELS OF EMPLOYMENT IN OCCUPATIONAL FAMILIES

Occupational Family	Levels of Employment										
	Prof.	Tech.	Managerial	Supervisory	Sales	Office	Skilled	Semi-skilled	Un-skilled	Total	Per Cent
Farm Machinery Sales & Service	31	0	362	82	354	88	730	173	8	1,828	9.1
Farm Supplies & Equipment	25	16	805	96	677	306	138	597	362	3,022	15.1
Livestock & Poultry	3	113	555	218	476	182	504	1,046	97	3,194	16.0
Crops, Forestry & Soil Conservation	363	169	621	282	233	246	919	1,941	1,287	6,061	30.3
Ornamental Horticulture	20	2	199	22	83	13	102	61	426	928	4.6
Wildlife & Recreation	17	2	34	51	0	1	10	42	216	373	1.9
Farm Service	64	164	381	87	111	155	395	373	114	1,844	9.2
Agricultural Service	793	820	217	92	16	453	153	128	103	2,775	13.8
Total	1,316	1,286	3,174	930	1,950	1,444	2,951	4,361	2,613	20,025	100.0
Per Cent	6.6	6.4	15.8	4.7	9.7	7.2	14.8	21.8	13.0	100.0	

A total of 7,312 workers, or 36.6 per cent, was classified as skilled and semiskilled. Employers interviewed indicated that these workers were very important to the operation of the business and were usually required to have knowledge and skill in agricultural subjects in specialized areas. Unskilled level employees (13 per cent) were reported as needing agricultural skills, but usually on a limited scale.

Eliminating the unskilled, a ranking of occupational levels by number of workers gives a very clear picture of occupational opportunities offered at each level:

Semiskilled
Managerial
Skilled
Sales
Office
Professional
Technical
Supervisory

Professional personnel employed in the state universities and colleges were not included in this study. Inclusion of these employees would have moved the professional level to a higher rank inasmuch as Louisiana State University alone has a staff of over 800 professional agriculturalists. The number of technicians would also have increased.

Job Entry Age Into Nonfarm Agricultural Occupations

The mean age for all employees was computed by occupational family and for each level of employment. Consideration was given to the present age, minimum age for job entry, and the maximum age for entry.

Table V shows averages of ages for all levels of employment. Subsequently Tables VI-1 through VI-8 present the same information by occupational families and level of employment.

TABLE V

AVERAGE PRESENT, AVERAGE MINIMUM AND AVERAGE MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY LEVEL OF EMPLOYMENT

Level of Employment	Present	Minimum	Maximum
Professional	34	24	47
Technical	37	24	50
Managerial	39	26	50
Supervisory	38	25	50
Sales	36	23	49
Office	34	23	48
Skilled	34	22	48
Semiskilled	33	21	48
Unskilled	34	21	48

The average age of all employees required to have agricultural competencies varied little among the families and the different levels of employment. Ages of employees ranged from 33-39, with 34 years representing the average age.

Minimum employment entry age ranged from 21 to 26, giving an average for all levels of employment of approximately 23 years. The lack of younger people in some of the categories was attributed to a qualifications deficit, with compulsory military service also contributing to the shortage.

TABLE VI-1

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

FARM MACHINERY SALES AND SERVICE

Level of Employment	Present	Minimum	Maximum
Professional	31	25	41
Technical	38	25	50
Managerial	37	27	48
Supervisory	38	28	47
Sales	36	23	49
Office	33	22	47
Skilled	35	22	47
Semiskilled	31	21	44
Unskilled	38	20	50

TABLE VI-2

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

FARM SUPPLIES AND EQUIPMENT

Level of Employment	Present	Minimum	Maximum
Professional	36	25	46
Technical	39	27	53
Managerial	39	26	50
Supervisory	36	26	48
Sales	35	23	48
Office	34	22	47
Skilled	35	22	46
Semiskilled	32	21	47
Unskilled	37	20	47

TABLE VI-3

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

LIVESTOCK AND POULTRY

Level of Employment	Present	Minimum	Maximum
Professional	30	25	50
Technical	36	23	51
Managerial	37	26	48
Supervisory	35	24	49
Sales	34	22	51
Office	35	22	48
Skilled	34	21	48
Semiskilled	32	22	48
Unskilled	31	25	46

TABLE VI-4

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

CROPS, FORESTRY AND SOIL CONSERVATION

Level of Employment	Present	Minimum	Maximum
Professional	35	23	46
Technical	36	25	49
Managerial	39	27	50
Supervisory	40	28	51
Sales	39	25	48
Office	35	23	48
Skilled	38	25	51
Semiskilled	37	21	47
Unskilled	37	22	50

TABLE VI-5

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

ORNAMENTAL HORTICULTURE

Level of Employment	Present	Minimum	Maximum
Professional	31	23	42
Technical	30	22	45
Managerial	42	26	50
Supervisory	36	25	50
Sales	35	22	48
Office	32	25	43
Skilled	30	22	46
Semiskilled	32	20	49
Unskilled	32	21	48

TABLE VI-6

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

WILDLIFE AND RECREATION

Level of Employment	Present	Minimum	Maximum
Professional	41	24	55
Technical	42	22	53
Managerial	40	24	53
Supervisory	41	24	58
Sales	-	-	-
Office	30	25	50
Skilled	35	25	50
Semiskilled	33	24	51
Unskilled	38	22	53

TABLE VI-7

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

FARM SERVICE

Level of Employment	Present	Minimum	Maximum
Professional	33	22	44
Technical	34	23	47
Managerial	39	26	50
Supervisory	39	20	47
Sales	38	22	50
Office	36	22	50
Skilled	34	23	47
Semiskilled	31	20	46
Unskilled	32	20	46

TABLE VI-8

AVERAGE PRESENT, MINIMUM AND MAXIMUM AGE OF ENTRY INTO OFF-THE-FARM AGRICULTURAL OCCUPATIONS, BY OCCUPATIONAL FAMILY AND LEVEL OF EMPLOYMENT

AGRICULTURAL SERVICE

Level of Employment	Present	Minimum	Maximum
Professional	37	24	51
Technical	38	22	49
Managerial	41	28	52
Supervisory	39	25	50
Sales	36	24	50
Office	36	22	50
Skilled	32	20	48
Semiskilled	36	21	49
Unskilled	30	21	42

Most employers indicated that younger people with the necessary education and training would be acceptable. An analysis of the maximum job entry age showed employers were of the opinion that the firm should be able to realize 15 to 20 years service from an employee prior to retirement. The average maximum entry age for all levels was approximately 40 years.

A review of the mean ages for all families revealed that the differences in ages were not significant. All families and all levels of employment contained an agricultural working force averaging about 34 years. The average minimum entry age was 23, with 48 being maximum.

Monthly Salaries or Wages In Occupations Other Than Farming

Data gathered by the study indicated that as a matter of general procedure, employees were paid in accordance with their background of training and responsibilities, as well as their tenure with a particular organization.

A factor influencing average salaries in at least four families -- Crops, Forestry and Soil Conservation; Ornamental Horticulture; Wildlife and Recreation, and Livestock and Poultry -- was the large number of semiskilled and unskilled workers. This group of employees can never hope to achieve a salary, even after years of tenure, to match the beginning salaries of the other levels of employment.

The occupational families varied in salary scales for the several levels, yet generally professional and managerial levels were at the top of the scale with unskilled at the bottom.

As noted in Table IV, 35 per cent of the total agricultural workers were found in the semiskilled and unskilled levels of employment. These levels require lesser amounts of education and training, did not offer satisfactory beginning pay, and had definite limitations for pay increases following tenure. At the same time four levels of employment -- professional, technical, managerial, and supervisory -- accounted for 33.5 per cent of the agricultural workers. It seems significant that these four categories headed the list in terms of starting and maximum salaries. These data have definite implications for designing programs in terms of future job demands.

TABLE VII

AVERAGE MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY LEVEL OF EMPLOYMENT

Level of Employment	Beginning	Present	Maximum
Professional	$441.95	$582.44	$682.01
Technical	369.34	446.57	532.40
Managerial	385.85	494.65	605.31
Supervisory	369.60	460.78	512.85
Sales	295.69	394.04	489.07
Office	271.10	333.74	385.34
Skilled	283.65	345.21	406.10
Semiskilled	217.60	266.10	307.79
Unskilled	190.65	218.30	244.87

These data indicate that 24.5 per cent of the employees in firms surveyed performed jobs classified in the sales and skilled employment levels. Salaries in these levels were below those reported for the technical and supervisory workers. However, starting salaries for this group were good and there were indications of possibilities for salary advancement as the individual gained experience and tenure. This seemed to offer incentive for young workers who meet the qualifications outlined by employers.

TABLE VIII-1

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

FARM MACHINERY SALES AND SERVICE

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$601.00	$676.00	$723.72
Technical	276.00	426.00	576.00
Managerial	424.07	542.66	651.00
Supervisory	381.55	438.50	506.00
Sales	333.50	463.50	613.50
Office	239.46	312.90	383.14
Skilled	282.87	371.75	450.33
Semiskilled	223.32	266.70	296.00
Unskilled	183.33	200.00	200.00

TABLE VIII-2

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

FARM SUPPLIES AND EQUIPMENT

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$426.00	$501.00	$626.00
Technical	526.00	576.00	626.00
Managerial	362.00	479.00	570.00
Supervisory	348.00	430.00	496.00
Sales	250.00	333.00	397.00
Office	230.00	294.00	355.00
Skilled	275.00	336.00	390.00
Semiskilled	236.00	286.00	326.00
Unskilled	193.00	220.00	248.00

TABLE VIII-3

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

LIVESTOCK AND POULTRY

Level of Employment	Median Monthly Salary Beginning	Present	Maximum
Professional	-	-	-
Technical	$386.00	$463.50	$532.25
Managerial	355.41	455.54	601.00
Supervisory	379.12	446.83	519.75
Sales	262.54	344.75	396.00
Office	212.76	266.39	321.83
Skilled	252.56	309.62	353.73
Semiskilled	204.22	244.93	285.88
Unskilled	187.50	187.50	226.00

TABLE VIII-4

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

CROPS, FORESTRY AND SOIL CONSERVATION

Level of Employment	Median Monthly Salary Beginning	Present	Maximum
Professional	$358.50	$661.00	$717.66
Technical	422.87	485.37	560.37
Managerial	423.58	461.00	594.10
Supervisory	415.29	480.41	534.33
Sales	371.83	461.71	538.50
Office	276.96	333.95	380.76
Skilled	305.74	362.98	410.23
Semiskilled	242.32	291.79	351.31
Unskilled	194.08	234.57	263.50

TABLE VIII-5

MEDIAN NOMTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

ORNAMENTAL HORTICULTURE

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$326.00	$476.00	$576.00
Technical	175.00	175.00	175.00
Managerial	366.00	471.00	601.00
Supervisory	301.00	375.00	375.00
Sales	180.00	245.00	339.00
Office	276.00	326.00	376.00
Skilled	180.00	235.00	285.00
Semiskilled	178.00	220.00	270.00
Unskilled	184.00	234.00	257.00

TABLE VIII-6

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

WILDLIFE AND RECREATION

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$438.50	$567.66	$701.00
Technical	351.00	426.00	526.00
Managerial	238.50	351.00	451.00
Supervisory	288.50	451.00	501.00
Sales	-	-	-
Office	376.00	426.00	426.00
Skilled	401.00	451.00	501.00
Semiskilled	226.00	301.00	326.00
Unskilled	200.00	234.33	263.50

TABLE VIII-7

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

FARM SERVICE

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$463.50	$525.50	$710.09
Technical	476.00	626.00	712.60
Managerial	432.94	556.76	663.50
Supervisory	414.88	538.50	588.50
Sales	296.00	459.33	588.50
Office	276.66	328.27	400.00
Skilled	280.16	338.81	445.04
Semiskilled	231.00	271.58	311.71
Unskilled	200.00	236.00	250.00

TABLE VIII-8

MEDIAN MONTHLY SALARY OF OCCUPATIONS OTHER THAN FARMING, BY OCCUPATIONAL FAMILIES AND LEVEL OF EMPLOYMENT

AGRICULTURAL SERVICE

Level of Employment	Median Monthly Salary		
	Beginning	Present	Maximum
Professional	$480.20	$669.94	$719.65
Technical	341.91	394.75	551.00
Managerial	484.33	640.28	710.90
Supervisory	428.50	526.00	582.25
Sales	376.00	451.00	551.00
Office	290.02	382.48	440.06
Skilled	291.91	356.55	413.50
Semiskilled	200.00	246.83	295.44
Unskilled	183.33	200.00	251.00

Educational Level Desired of Workers in Nonfarm Agriculture

Data indicate that education and occupational training held a priority rating in all aspects of nonfarm agriculture. Table IX gives educational level desired of workers entering nonfarm agricultural jobs, and clearly shows the emphasis placed on formal education.

An analysis of these data confirm the general belief that students planning careers in nonfarm agriculture are expected to complete high school. Only 10.6 per cent of the jobs were available to individuals not holding high school diplomas.

Emphasis placed upon college training was of special significance; 3,069, or 15.3 per cent, of the employees were listed by the employers as needing a college degree to make job entry. An additional 2,180 or 10.9 per cent, had to show some college work before they met employment qualifications. This trend was especially evident in the Agricultural Service family where 1,232 of the 2,775 employees must have college diplomas. If all university and college agricultural personnel were added, the percentage of nonfarm agricultural workers in this family would have increased sharply, making the need for college trained personnel take on added significance. It is estimated that more than 800 agricultural workers are employed in the state institutions having agricultural programs.

Employer concern over the lack of qualified youth applying for jobs in their organizations was indicated by insistence upon formal education for practically all of their future employees. Of special significance was the often expressed idea of the need for prevocational training leading to job entry.

TABLE IX

EDUCATIONAL LEVEL DESIRED OF PERSONS ENTERING AGRICULTURAL OCCUPATIONS OTHER THAN FARMING

Occupational Family	Number of Employees	Number of Employees											
		Less Than High School		High School Graduate		Post H. S. Tech. Educ.		Some College		College Degree		No Preference	
		No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Farm Machinery Sales & Service	1,828	73	4.0	925	50.6	314	17.2	268	14.7	186	10.2	62	3.3
Farm Supplies & Equipment	3,022	261	8.6	1,749	57.9	183	6.1	372	12.3	352	11.6	105	3.5
Livestock & Poultry	3,194	509	15.9	1,692	53.0	164	5.1	300	9.4	311	9.8	218	6.8
Crops, Forestry & Soil Conservation	6,061	789	13.0	3,559	58.7	296	4.9	380	6.3	634	10.5	403	6.6
Ornamental Horticulture	928	141	15.2	438	47.2	27	2.9	111	12.0	67	7.2	144	15.5
Wildlife & Recreation	373	114	30.6	176	47.2	3	.8	25	6.7	26	6.9	29	7.8
Farm Service	1,844	163	8.8	924	50.1	202	10.9	256	13.9	261	14.2	38	2.1
Agriculture Service	2,775	65	2.3	841	30.3	149	5.4	468	16.8	1,232	44.5	20	.7
Total	20,025	2,115	10.6	10,304	51.5	1,338	6.7	2,180	10.9	3,069	15.3	1,019	5.0

Residential Background Preferred of New Employees

A farm-reared background was considered desirable in 49.8 per cent of the job cases, indicating that this factor was not an absolute requirement for entering nonfarm agricultural occupations.

Table X shows the kind of background preferred by the nonfarm agricultural firms for new employees.

A fact outstanding in Table X is that 44.1 per cent of the nonfarm agricultural employees will be replaced without regard to their residential background -- emphasis was placed upon ability to perform work required rather than the place the competencies were acquired. In the case of two families -- Wildlife and Recreation, and Ornamental Horticulture -- 70.5 and 69.1 per cent respectively of the vacancies will be filled with no preference as to residential background.

A rather surprising revelation was that rural nonfarm and urban residential backgrounds were not considered as factors in employment. Combined, the two backgrounds received a preference rating in only 6.1 per cent of the cases. This, when viewed with the 49.8 per cent preference for the farm reared, indicated that rural youth have a "head start" over those with urban backgrounds.

Farm Experience Preferred of New Employees

Almost one-half of the employees having agricultural competencies, 9,973, would be replaced, as vacancies occur, with applicants having a farm residential background. Data referring to the kind of farm residential background preferred -- commercial farm, non-commercial farm, or no preference as to the kind -- appear in Table XI.

TABLE X

RESIDENTIAL BACKGROUND PREFERRED OF NEW EMPLOYEES

Occupational Family	Number of Employees	Farm		Rural Non-Farm		Urban		No Preference	
		No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Farm Machinery Sales & Service	1,828	1,059	57.9	159	8.7	7	.4	603	33.0
Farm Supplies & Equipment	3,022	1,331	44.1	155	5.1	60	2.0	1,476	48.8
Livestock & Poultry	3,194	1,498	46.9	80	2.5	18	.6	1,598	50.0
Crops, Forestry & Soil Conservation	6,061	3,253	53.7	392	6.5	10	.1	2,406	39.7
Ornamental Horticulture	928	263	28.3	20	2.2	4	.4	641	69.1
Wildlife & Recreation	373	89	23.9	19	5.1	2	.5	263	70.5
Farm Service	1,844	871	47.3	93	5.0	26	1.4	854	46.3
Agricultural Service	2,775	1,609	58.0	171	6.2	11	.4	984	35.4
Total	20,025	9,973	49.8	1,089	5.4	138	.7	8,825	44.1

TABLE XI

FARM EXPERIENCE PREFERRED OF NEW EMPLOYEES

Occupational Family	Number of Employees	Commercial Farm		Non-Commercial Farm		No Preference	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
Farm Machinery Sales & Service	1,059	381	36.0	348	32.8	330	31.2
Farm Supplies & Equipment	1,331	635	47.8	292	21.9	404	30.3
Livestock & Poultry	1,498	582	38.9	212	14.2	704	46.9
Crops, Forestry & Soil Conservation	3,253	500	15.5	917	28.1	1,836	56.4
Ornamental Horticulture	263	135	51.8	75	28.5	53	19.7
Wildlife & Recreation	89	13	14.7	29	32.5	47	52.8
Farm Service	871	330	37.9	274	31.5	267	30.6
Agricultural Service	1,609	669	41.6	463	28.8	477	29.6
Total	9,973	3,245	32.5	2,610	26.2	4,118	41.3

Commercial farm experience took precedence over that obtained on a non-commercial farm. However, for 41.3 per cent of the workers where farm residential background was a factor, no preference was listed as to kind or type of farm experience. Statewide, where farm background was favored, it was indicated that employers felt that 58.7 per cent of the jobs would best be filled with persons having a specific kind of farm experience. Significantly, firms specializing in farm or agriculture service or the processing of an agricultural commodity were unwilling to restrict employment to those with a farm background or to a particular kind of farm. Emphasis was placed on formal education and specific training leading to job entry qualifications.

Agricultural Areas in Which Nonfarm Agricultural Workers Must Have Competencies

One of the major objectives of the research was to determine job requirements, in terms of knowledge and skill in agricultural subjects, needed by prospective employees in order to enter and advance in nonfarm agricultural occupations. These requirements,along with educational level,make up the heart of the study.

To record information and guide interviewees in summarizing job requirements in terms of agricultural competencies necessary in the different job titles, agricultural subject matter was divided into four broad areas: (1) Animal Science, (2) Plant Science, (3) Agricultural Business Management and Marketing, and (4) Agricultural Mechanization and Automation. Each area was divided into categories which described specialized agricultural knowledge to aid employers in identifying particular skills associated with the performance of each job title.

Tables XII-1 through XII-8 show agricultural subject areas in which employees must have training, according to occupational families and levels of employment. Specific knowledge and skill associated with particular job titles are not identified in this report.

Data in the Tables XII-1 through XII-8 indicate the rank that employers gave to the various competency groups in terms of the need for these competencies to be developed in future employees. In order to report effectively the results of this section of the survey a competency rating scale was developed as follows: high (1.8-3.0), medium (1.4-1.7), low (1.0-1.3). This ranking enables educators to place emphasis on agricultural subject matter training in terms of job entry requirements as indicated by the firms employing nonfarm agricultural workers. Definite trends were in evidence in all occupational families:

1. Generally speaking, a rather broad coverage of all subject matter areas in agriculture was required of all nonfarm agricultural workers.

2. The particular product processed or sold and the service for sale within an agricultural family determined the subject matter areas involved.

3. Data indicate that as a usual rule employees at the managerial and supervisory levels were required to have broad knowledge in subject matter areas as well as specialized knowledge in relation to a particular business.

4. Employees at the professional level were expected to have training in all of the agricultural areas, but at the same time they must have intensive training in their area of specialization.

5. Depending on the family, the coverage of agricultural subject matter for technical workers varied. In all cases intensive training was required in the particular phase making up the subject matter content pertinent to job performance activities of the employee.

6. In the skilled and semiskilled levels workers were intensively trained in a particular area or one of the divisions making up an area.

TABLE XII-1

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

FARM MACHINERY SALES AND SERVICE

Level of Employment	Number	Average Competency Ratings Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	31	1.041	1.737	1.771	2.240
Technical	-	-	-	-	-
Managerial	362	1.459	1.739	2.276	2.242
Supervisory	82	1.095	1.398	1.529	2.262
Sales	354	1.510	1.733	2.010	2.131
Office	88	1.062	1.122	2.011	1.304
Skilled	730	1.118	1.270	1.360	2.198
Semi-Skilled	173	1.085	1.217	1.261	2.011
Unskilled	8	1.000	1.000	1.000	1.611

Competency Rating Scale:
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

TABLE XII-2

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

FARM SUPPLIES AND EQUIPMENT

		Average Competency Ratings			
Level of Employment	Number	Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	25	1.833	1.909	2.208	1.611
Technical	16	1.234	1.807	1.829	1.979
Managerial	805	1.815	1.764	2.177	1.836
Supervisory	96	1.592	1.646	1.755	1.929
Sales	677	1.758	1.754	1.850	1.817
Office	206	1.315	1.304	1.833	1.353
Skilled	138	1.368	1.296	1.420	2.057
Semi-Skilled	597	1.236	1.272	1.326	1.695
Unskilled	362	1.267	1.316	1.224	1.609

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

TABLE XII-3

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

LIVESTOCK AND POULTRY

Level of Employment	Number	Average Competency Rating			
		Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	3	-	-	-	-
Technical	113	2.344	1.183	1.932	1.565
Managerial	555	2.136	1.310	2.176	1.638
Supervisory	218	2.060	1.163	1.924	1.820
Sales	476	1.806	1.097	1.819	1.249
Office	182	1.565	1.037	2.044	1.135
Skilled	504	1.921	1.120	1.455	1.380
Semi-Skilled	1,046	1.665	1.085	1.257	1.441
Unskilled	97	1.250	1.000	1.000	1.500

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

TABLE XII-4

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

CROPS, FORESTRY AND SOIL CONSERVATION

		Average Competency Rating			
Level of Employment	Number	Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	363	1.347	2.031	2.162	1.807
Technical	169	1.200	1.695	1.807	1.824
Managerial	621	1.331	1.750	2.382	1.871
Supervisory	282	1.086	1.560	1.846	1.854
Sales	233	1.197	1.720	1.946	1.517
Office	246	1.090	1.394	1.965	1.250
Skilled	919	1.067	1.342	1.322	1.859
Semi-Skilled	1,941	1.120	1.319	1.259	1.619
Unskilled	1,287	1.040	1.313	1.108	1.474

Competency Rating Scale
  High (1.8 - 3.0)
  Medium (1.4 - 1.7)
  Low (1.0 - 1.3)

TABLE XII-5

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR,BY OCCUPATIONAL FAMILIES

ORNAMENTAL HORTICULTURE

Level of Employment	Number	Average Competency Rating Animal Science	 Plant Science	 Agri. Bus. Mangt. & Mkt.	 Agri. Mech. & Automation
Professional	20	2.125	2.909	2.750	2.167
Technical	2	1.000	1.727	1.000	1.667
Managerial	199	1.003	2.336	2.227	2.113
Supervisory	22	1.000	2.545	2.500	2.541
Sales	83	1.000	2.030	1.972	1.611
Office	13	1.000	1.591	1.937	1.750
Skilled	102	1.047	2.017	1.289	1.166
Semi-Skilled	61	1.000	1.958	1.407	1.664
Unskilled	426	1.057	1.743	1.245	1.794

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

TABLE XII-6

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

WILDLIFE AND RECREATION

		Average Competency Rating			
Level of Employment	Number	Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	17	2.000	2.197	1.791	2.222
Technical	2	2.000	1.727	1.000	1.250
Managerial	34	1.427	1.310	1.771	1.569
Supervisory	51	1.449	1.698	1.481	1.775
Sales	-	-	-	-	-
Office	1	2.000	2.091	2.000	2.500
Skilled	10	1.313	1.636	1.625	2.417
Semi-Skilled	42	1.162	1.672	1.325	1.583
Unskilled	216	1.340	1.424	1.104	1.602

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

TABLE XII-7

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR, BY OCCUPATIONAL FAMILIES

FARM SERVICE

		Average Competency Rating			
Level of Employment	Number	Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	64	2.083	2.058	2.480	2.223
Technical	164	1.617	1.586	1.826	1.505
Managerial	381	1.407	1.596	2.056	2.008
Supervisory	87	1.956	1.976	2.537	2.371
Sales	111	1.450	1.437	2.003	2.220
Office	155	1.151	1.229	1.811	1.247
Skilled	395	1.119	1.213	1.281	2.239
Semi-Skilled	373	1.105	1.231	1.248	1.795
Unskilled	114	1.046	1.120	1.139	1.886

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

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TABLE XII-8

AGRICULTURAL AREAS WITH WHICH EMPLOYEES MUST BE FAMILIAR,BY OCCUPATIONAL FAMILIES

AGRICULTURAL SERVICE

Level of Employment	Number	Average Competency Rating Animal Science	Plant Science	Agri. Bus. Mangt. & Mkt.	Agri. Mech. & Automation
Professional	793	2.248	2.288	2.393	2.121
Technical	820	1.520	1.842	1.765	1.809
Managerial	217	1.740	1.908	2.334	1.932
Supervisory	92	1.678	1.996	2.137	2.030
Sales	16	1.250	1.864	1.563	2.083
Office	453	1.316	1.557	2.042	1.419
Skilled	153	1.078	1.418	1.514	1.578
Semi-Skilled	128	1.595	1.502	1.457	1.592
Unskilled	103	1.604	1.178	1.087	1.516

Competency Rating Scale
High (1.8 - 3.0)
Medium (1.4 - 1.7)
Low (1.0 - 1.3)

Evidence implying the need for agricultural training at sales and office levels was significant. This indicates the necessity for providing a much broader program of training for persons serving at these levels. These data are in agreement with that of other states indicating that vocational agriculture may support, or be supported by, other vocational subjects taught in the comprehensive high school. More of this type of supporting education must be included in curriculum planning if vocational education is to be effective in preparing youth for the complex world of work.

A further analysis of data presented here shows rather clearly that it is no longer sufficient just to have prospective employees available and willing to work. A premium was placed on education and occupational training, indicating the need for more adequately trained persons to enter the expanding area of nonfarm agriculture.

Data clearly show that each occupational family reflects a "cluster" of jobs at the various employment levels which may be utilized as a basis for developing instructional programs. This is especially true where job titles combine a number of skills or have a common core of subject matter.

Continuing Education Required of Nonfarm Agricultural Employees

A portion of the study was devoted to a determination of the kind of continuing education required of employees if they aspired to advance in the firm, to the type of educational facility used for training, and the degree of participation by employees. Table XIII contains the tabulated results of employer responses.

An interesting pattern developed as the data were analyzed. On-the-job training and firm or industry schools were usually used for upgrading

TABLE XIII

CONTINUING EDUCATION REQUIRED BY FIRMS TO ADVANCE IN OCCUPATIONS

Occupational Family	Number of Employees	Number of Employees: Firm or Industry School		On-the-Job Training		Public School Adult Educ.		Vocational School		Agri. College		None	
		No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Farm Machinery Sales & Service	1,828	1,139	62.3	1,476	80.7	71	3.9	267	14.6	74	4.0	33	1.8
Farm Supplies & Equipment	3,022	1,298	43.0	2,376	78.6	118	3.9	316	10.4	223	7.4	254	8.4
Livestock & Poultry	3,194	1,315	41.2	2,502	78.3	84	2.6	176	5.5	221	6.9	236	7.4
Crops, Forestry & Soil Conservation	6,061	2,272	37.5	4,705	77.6	131	2.2	395	6.5	392	6.4	1,071	17.7
Ornamental Horticulture	928	308	33.1	628	67.6	21	2.3	145	15.6	154	16.6	110	11.8
Wildlife & Recreation	373	36	9.7	296	79.4	2	0.5	20	5.4	63	16.9	43	11.5
Farm Service	1,844	743	40.2	1,488	80.6	51	2.8	150	8.1	193	10.5	198	10.7
Agricultural Service	2,775	732	26.4	1,865	67.1	67	2.4	96	3.5	615	22.1	505	18.2
Total	20,025	7,834	39.1	15,336	76.7	545	2.7	1,565	7.8	1,935	9.7	2,450	12.3

employees -- 76.7 per cent and 39.1 per cent, respectively. The use made of public school programs was almost negligible -- only 545 workers, or 2.7 per cent. Vocational schools and agricultural colleges were indicated as the means for upgrading employees in 7.8 per cent and 9.7 per cent of the cases. Employers did not provide for or require continuing education for 2,450, or 12.3 per cent, of the workers.

Efforts were made in all concerns to have training available for employees on a continuing basis. Expressions by employers indicated that reliance on on-the-job training as the primary resource for employee upgrading was due to a lack of availability of the types of programs needed at the high school or post-high school levels. This points up the need for consideration of an extension of the secondary school program to include training and retraining to meet the needs of industry. This would be consistent with the emerging pattern in vocational education -- that of providing appropriate training and retraining in terms of the needs of the work force.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The march of technology and science in a modern and progressive society emphasizes more than ever, and for an ever-increasing proportion of the population, the need for development of more salable vocational skills. Workers without competence in keeping with the demands of progress are at a growing disadvantage and will eventually find that they have been written out of the labor market.

This research emphasizes that tremendous shifts have taken place in the agricultural industry in recent years. A broad complex of nonfarm agricultural businesses and services has evolved to facilitate the work of the production farmer. It is a complex involving hundreds of professional, technical, and vocational occupations requiring extensive knowledge and highly developed skills for successful performance. Trends indicate that agriculture will continue to respond to the demands of technology and, with the increase in population, will become even more intricate and specialized in the future. Therefore, individuals aspiring to enter agricultural occupations should become knowledgeable concerning the types of jobs available and their characteristics.

The President's Panel of Consultants on Vocational Education in its summary report recommended that the vocational agriculture program, under federal reimbursement, should be broadened to include training in agricultural occupations other than farming or ranching. This suggestion was implemented in the Morse-Perkins Act of 1963.

In recognition of this need and in anticipation of the broadened responsibility for vocational agriculture, Louisiana began to participate in activities that led to the awarding of a state grant in November 1963 by the State Board of Liquidation of the State Debt. This allotment financed a survey of the nonfarm businesses and agencies in the seven metropolitan areas of the state -- Alexandria, Baton Rouge, Lafayette, Lake Charles, New Orleans, Monroe and Shreveport. As this project neared completion, application was made to the U. S. Office of Education for a grant under terms of Section 4 (c) of the Morse-Perkins Act for funds to carry the study into the smaller cities and towns. The project was funded under contract number OE 5-85-040 and began June 15, 1965. This report combines the results of the studies of the seven metropolitan centers and the 90 semi-urban and rural towns in Louisiana,thus providing a comprehensive state summary of nonfarm agricultural jobs.

This report is arranged to reveal the following information:

(1) Numbers of people employed, numbers needing agricultural competencies, expected numbers of persons to be hired in the next five years, and numbers of job titles.

(2) Characteristics such as age, education, background, and salary.

(3) Agricultural competencies needed to effect job entry and additional education required for continuation and advancement in the firm.

In short, the task of this research has been to accumulate facts concerning nonfarm agricultural occupations within Louisiana, and to inform educators, employers, parents, and high school youth of the abundance of agricultural opportunities existing in this state -- for those who prepare themselves.

Findings are summarized as follows:

1. There were 2,430 businesses and agencies surveyed, representing the vast agricultural complex of Louisiana. These organizations employed 51,719 workers -- of which 20,025 were required to have competencies in agriculture. Within a five-year period the number of workers with skills and knowledge in agricultural subjects is expected to rise to 21,999.

2. The 20,025 workers were found under 1,699 job titles. Five years hence it is expected that the number of job titles will increase to 1,862, an increase of 9.5 per cent.

3. Occupational families recording the greatest number of workers were those dealing with Crops, Forestry and Soil Conservation; Farm Supplies and Equipment; Livestock and Poultry, and Agricultural Service. These areas also supplied the largest number of job titles.

4. Insofar as the levels of employment were concerned, semiskilled, managerial, skilled, and sales, in the order listed contained the largest number of agricultural workers when all families were considered. Professional workers were found in two families primarily -- Agricultural Service, and Crops, Forestry and Soil Conservation. In proportion to the total number of workers, Wildlife and Recreation listed the largest number of unskilled employees -- 59 per cent.

5. Technician level employees ranked seventh in total number of workers, with the Agricultural Service family utilizing the largest number. These workers would advance in numbers if state colleges and universities had been included in the survey.

6. Employers interviewed indicated that the minimum age would not be less than 23 years for replacing employees leaving the business. This implies that employers would, in most cases, discriminate against hiring youngsters directly out of high school if more mature applicants were available. Generally speaking, 48 years is considered to be the maximum age for hiring new workers. All families and all levels of employment presented an agricultural working force averaging about 34 years.

7. A definite pattern was apparent in all firms relative to salary schedules. Employees were paid in relation to their background of education, training, experience and responsibility, beginning with low pay for the unskilled followed by substantial increases for the skilled and continuing upward through the management and professional levels. As a rule, employers felt that a well trained worker was the best investment their business could make, and they were ready to pay higher salaries for well trained individuals. Significant salary advances were given with tenure, with the exception of the semiskilled and unskilled categories where pay remained at low levels.

8. Generally, a high school education was a prerequisite for entry into nonfarm agricultural occupations. Only 10.6 per cent of the jobs would be filled with applicants who were not high school graduates. Taking into account all families and all levels of employment, one in four prospective employees was expected to have a college degree or some college training.

9. Residential background was a factor considered by employers when replacing employees in only 55.2 per cent of the job titles. Approximately one-half of the positions could best be filled with workers with farm backgrounds. Experience gained by the prospective employees on a commercial farm was preferred to that obtained on a non-commercial farm. Employers indicated that applicants with urban backgrounds would not be discriminated against. However, only a small number of cases were recorded where an urban background was preferable to the farm.

10. The degree of competency in agricultural subjects required of employees varied according to the work performed in each job title and each occupational family. However, certain similarities existed: (1) generally, a rather broad coverage of subject matter was required of all workers above the semiskilled and unskilled levels; (2) employees at the management and supervisory levels, in addition to having specialized knowledge in relation to a particular business, were expected to be widely knowledgeable in agricultural subjects; (3) employees at the professional level were expected to have some training in all agricultural areas, but at the same time they must have intensive training in their area of specialization; (4) the coverage of agricultural subject matter for technical workers varied, depending on the family, but in all cases intensive training was required in the subject matter content pertinent to job performance; (5) skilled level workers possessed knowledge and skill in a particular area or one of the divisions making up an area.

11. Efforts were made in all concerns to have training for employees on a continuing basis. On-the-job training, and firm or industry schools, were the chief means of providing such training. Employers made limited use of training provided through public school adult education programs and vocational programs.

12. Education and training for job entry were the restrictions placed on the great majority of job titles. Some of the agencies had job titles requiring civil service ratings, while only a slight percentage were under contract with labor. Most jobs at the professional level required a college degree and in some instances a professional degree. A small number of jobs at the technical and skilled levels required licenses.

13. Considerable growth in terms of job titles and numbers of employees was reported by all businesses and agencies, particularly those supplying farmers with items and services necessary for production, followed by those processing and marketing farm produced commodities.

14. Employers expressed a need for a supply of trained workers, emphazing the value of education, training and skill. Of special significance was the emphasis placed upon occupational training obtained prior to job entry.

Conclusions

This study of the nonfarm agricultural complex of the state depicts rather vividly the creation of new fields of employment owing to the combining of science and technology. The host of jobs once available to youth have been eliminated from farm work, but at the same time the applications of research findings and automation have resulted in new occupational fields where the number of job opportunities exceed those formerly supplied on the farm.

Significantly, the jobs lost because of advancing technology in agriculture comprise those in which many untrained farm youth formerly found employment. Jobs emerging in off-farm agriculture demand an ever rising level of education, training and skill -- thus, to a large extent, eliminating the untrained.

The off-farm agricultural complex surveyed in Louisiana employed 51,719 people, of which a large portion, 20,025, were required to have certain knowledge and skill in agricultural subjects before job entry. For these workers, education in agriculture is a continuing process, as it is for the farmer. The untrained and the unskilled worker cannot hope to compete successfully in this manpower market.

Farm youth, because of work experiences gained at home, have a "head start" toward gainful employment in any segment of the nonfarm agricultural complex providing they have the interest and are willing to work, and if the necessary educational and training opportunities are made available and they utilize them.

Evidence assembled in this study "points up" the many employment opportunities for individuals trained in agriculture. How to make rural youth employable by education and training prior to job entry poses a very real problem to educators.

Evidence also describes areas where employment opportunities exist. If vocational agriculture is going to make a worthy contribution to occupational training, then efforts must be made to gear instruction to the needs of areas defined.

This research is one phase of an effort to make vocational agriculture more meaningful to youth in relation to job preparation. It is felt that the evidence presented will assist teachers and school administrators in making decisions concerning the broadening of vocational agriculture programs in keeping with the occupational interests and needs of youth:

1. Off-farm agricultural occupations are found in businesses and services with diverse functions. Although concentrated most heavily in services and retail sales, they are also found in manufacturing or processing, wholesaling, recreation, specialized agricultural production and education.

2. There is a vast array of separate and distinct job titles in which workers use agricultural competencies. The proportion of time devoted to the use of such competencies on the job varies widely with job titles. However, on the average, workers in non-farm agricultural occupations use agricultural knowledge and skill a high percentage of the time.

3. Survey results point out that the nonfarm agricultural complex is a vibrant segment of Louisiana's economy -- employing 51,719 persons of which 39.8 per cent perform duties requiring knowledge and skill in agriculture.

   Educational level required prior to job entry varied throughout the entire complex: the college graduate with a professional degree, the college graduate with an agricultural speciality, and the high school graduate with agricultural training. The great number of jobs and wide range of job requirements offer the prospective applicant considerable challenge with regard to testing his interests and ultimately making a job selection.

Roughly one-third of the total employees performed duties in the Professional, Technical, Managerial and Supervisory employment levels. These employees are the main gears of the organization and collectively offer the most promise for satisfactory employment. They direct the work of the other two-thirds.

4. Agriculture in Louisiana is growing rapidly as evidenced by a substantial increase expected in number of employees as well as job titles for the next five-year period.

   More than 1,600 job titles provide a vast array of opportunities for the interested and qualified. These jobs differ in training requirements, work involved, salary scales and opportunities for advancement.

   Salary schedules at all levels in all occupational families were found to be in terms of training and work performed. Jobs at the professional, technical and managerial levels demand more training, but also pay more. Jobs at the semiskilled and unskilled levels paid less, required a limited amount of training and offered little hope for advancement.

5. A high school education and some knowledge and experience in agriculture was sufficient for 51.5 per cent of the employees in nonfarm agricultural occupations. Employers reported the significant figure of 32.9 per cent of workers needing varying degrees of advanced training to meet job requirements. Employers listed post-high school training gained in vocational-technical schools and college as being preferable. Successful applicants to jobs which are considered professional must have a college degree, a qualification considered minimum in many other areas of employment. Continuous training, regardless of employee rank, was expected in all occupational families. On-the-job training, firm or industry schools, and programs offered at the secondary school or college levels are means of effecting such training.

Recommendations

Vocational education for occupations in nonfarm agriculture has recently assumed a new importance in Louisiana, as it has in the entire nation. The alarming rise in unemployment and under-employment of youth; the shortage of sorely needed trained personnel in the technical, semi-professional and skilled levels; the rising need for retraining workers displaced by automation; and the demand for new educational opportunities at the secondary and post-secondary school levels have forced a critical re-examination of vocational agriculture and its seeming neglect of occupational information.

This investigation revealed that agriculture is a part of society in which the occupational structure is changing rapidly. Some occupations have expanded, others have completely dissappeared, while an entire new catalog of jobs has come upon the scene, making necessary an entirely fresh concept of training programs.

National publicity has given agriculture a bad image from an occupational standpoint. However, there is no decline in job openings; opportunities are far in advance of training resources, if non-farm jobs are considered. A rising level of competency for prospective workers is demanded as new jobs emerge and those existing increase in importance. Vocational agricultural education, if it responds to the stimuli, is on the launching pad of a period of intensive growth and development.

Research indicates that rural youth, particularly over the past decade, have not benefitted fully from occupational opportunities available to them in agriculture. Training for employment other than that offered in traditional programs of vocational agriculture is no doubt the "number one" need on the local scene. Broadened programs will be the key to a new horizon with hundreds of job opportunities never before listed available to individuals. With interest and desire for employment in agricultural fields at a new high, training is the missing link.

All sectors of agriculture must look to schools, particularly at the secondary level, to provide pre-employment education. This training must range from occupational information to education in the sciences and technology. As society advances to a more highly skilled age, the school must provide more training for a growing percentage of our school population who expect to not only qualify to become adult members of society but wish to prepare for a future occupation while in high school.

What shall the vocational agriculture program include to fully meet the needs of students? This complex problem faces the more than 300 high schools in Louisiana offering vocational agriculture. The main problem is the assembling of sufficient teaching resources and the development of programs broad enough to be truly functional in occupational education.

Vocational agriculture as an area of public education in Louisiana must take action on the following recommendations, which in the opinion of the researchers are supported by factual evidence:

1. This study supports the premise that agriculture is more than farm production, involving thousands of workers engaged in furnishing supplies and services to farmers and to a vast number who process and distribute farm commodities over the state and nation. Employment opportunities for the agriculturally trained extend over the entire agricultural complex of the state.

   Production farming is still the basic segment of agriculture but changing demands have emphasized the urgent need for trained individuals in the total agricultural industry.

   Secondary school programs in vocational agriculture in Louisiana must be vastly expanded with a definite overhaul of training purpose if the demand for workers in production farming and nonfarm agriculture is to be filled with agriculturally trained individuals.

2. Traditionally, vocational agriculture has been restricted to schools located in the rural areas of the state. To date relatively few boys attending urban schools have had an opportunity to enroll, yet many of them can profit by the training.

   Research in this state and the nation shows that many urban boys enter nonfarm agricultural occupations. Reasons cited for this occupational selection vary from family connections with the business to an interest acquired because of casual contact with some phase of agriculture. These individuals have a right to expect some formal preparation in their interest area.

   Vocational agricultural training must be expanded to include more training opportunities. The Vocational Education Act of 1963 clearly states that monies allotted for agriculture may be used for vocational education in any occupation involving knowledge and skill in agricultural subjects whether or not such occupations involve the work of the farm.

3. Programs must be developed for individuals who will leave the home community to effect job entry. Generally, workers move to areas where employment opportunities are known to exist, thereby making it essential that the school keep an up-to-date catalog of occupational information. Work force mobility must be understood and those charged with the responsibility of program development and maintenance should keep abreast of manpower statistics, the requirements of the state and regional labor markets,as well as the local situation. The school today is no longer an educational institution specifically for the area in which it is located. It must serve the educational needs of its graduates who will find employment opportunities statewide, nationwide and internationally.

4. Subject matter in agriculture may be classified under four broad categories: Plant Science, Animal Science, Agricultural Business Management and Marketing, and Agricultural Mechanics and Automation. Functional programs in vocational agriculture must provide for student experiences involving these agricultural science areas, including aspects of production and processing.

   Developments in industry make it increasingly evident that detailed job descriptions must be the basis for building future training programs and that vocational training must be mixed with other subjects according to the demands of the job.

5. Employers are emphasizing that industry today demands a well educated worker, making it of paramount importance that vocational agriculture not be regarded as a separate feature completely apart from the rest of the school program. It must supplement a well planned program of general education for those preparing for entry into agricultural jobs.

Vocational education in any area must be considered as an enriching factor to the total educational program and not as a tolerated separate entity.

6. Work experiences are an integral part of any vocational education program. If a program of education is to turn out employables, opportunities must be provided that will enable students to perform in a job situation. Therefore, it is important that schools offering programs leading to employment in nonfarm agricultural occupations enter into training contracts with nearby cooperating agricultural businesses and agencies so that on-the-job training may be obtained under the supervision of the school.

   Consideration should be given to the development of self-contained school plants having laboratories for serving science programs and providing vocational agriculture with demonstration projects, besides giving students experiences in selected areas of agriculture.

7. A review of educational qualifications for the various nonfarm agricultural jobs identified in this study emphasizes the very important point that the secondary school must prepare interested students for education beyond high school. It is evident that those interested in a technical or professional job must pursue training either in a technical school, a junior college or complete a college course.

   The high school is not terminal, even though the employee does not attend a post high school program or go to college. Industry today requires that workers continue training so that they may be more effective and so that they may advance in the company. It also provides the means for their additional education.

   Regardless of the employment aims of the student, the school program must prepare for continuing education.

8. The schools must be responsible for placement and follow-up. In the past, schools at the secondary level have not considered this an educational function. The Vocational Act of 1963 provides for the cooperation of the Employment Security Division with all schools offering programs of vocational education in job identification and job placement.

   The maintenance of up-to-date employment information relating to former students is a must for schools having programs of vocational agriculture. Ultimate high school graduation with vocational agricultural training in no way assures successful job entry. Students must have help in selecting an occupation, in preparing for a job, and in securing employment upon graduation. The maintenance of an accurate follow-up record of former students is an absolute necessity for a sound counseling program.

9. Educators must consider the development of a more comprehensive high school. The decrease in rural population and the increasing difficulty of communities involved to provide training resources has brought about a trend toward a comprehensive educational system located in or near heavily populated urban areas.

   The pressures created by the rapid rate of change are so great that they certainly cannot be ignored by lay or professional leaders in education. Effective planning and development in modern educational programs require a keen awareness of the extent of the modification in science and technology. Solution of problems developing as a result of this revolution will require new developments in technology and will make new demands upon manpower.

   The comprehensive high school, with its superior resources, can provide broad general education for all youth, as well as supplying more specialized training for each individual which is designed to best serve his interests and needs.

   Recent research findings lend support to the trend in educational thinking that urban schools, due to the needs of agricultural businesses and agencies, should seriously consider the addition of programs in vocational agriculture. These schools can more easily assemble facilities and equipment for teaching purposes that are used in the occupations, and the close proximity of agriculturally-oriented businesses and agencies enables the development of adequate programs of work experience.

10. Research and development, successfully used as tools by business and industry, are assigned an important place in the future of vocational education. Research in nonfarm agricultural occupations must be continuous, and developmental centers applying research results at the local level must be set up if realistic training programs are to be developed. Vocational education should embody the philosophy that all citizens must have access to education and training that is of high quality and realistic in terms of opportunities for gainful employment.

SELECTED BIBLIOGRAPHY

Administration of Vocational Education, Vocational Education Bulletin No. 1, General Series No. 1, U. S. Department of Health, Education and Welfare, Washington, D. C.: U.S. Government Printing Office, 1963.

Bailey, Joseph K., *Non-Farm Agricultural Employment in West Virginia With Implications for Vocational Education Programs*, Division of Vocational, Technical and Adult Education, Charleston, West Virginia, January, 1965.

Barwick, Ralph P., *Identification of Off-Farm Agricultural Occupations*, A Preliminary Report of the Delaware Study of Agricultural Occupations Other Than Farming, Agricultural Education, School of Agriculture, University of Delaware, Newark, Delaware, Agricultural Education Publication No. 3, March, 1965.

Clark, Raymond M., *Training for Off-Farm Agricultural Occupations*, Office of Research and Publications, College of Education, Michigan State University, East Lansing, Michigan, 1963.

Clark, Raymond M., *Need for Training for Non-Farm Agricultural Business*, Michigan State University, Department of Teacher Education, East Lansing, Michigan, December, 1959.

Committee on Labor and Public Welfare, United States Senate, *Selected Education Acts of 1963*, Washington, D. C.: U.S. Government Printing Office, 1963.

Cushman, Harold R., Virgil E. Christensen, and Garry R. Bice, *Off-Farm Agricultural Occupations in New York State*, The Agricultural Education Division, Rural Education Department, New York State College of Agriculture, Cornell University, Ithaca, New York, January, 1965.

Dillion, Roy D., and Paul S. Cain , *Employment Opportunities and Usable Agricultural Skills in Non-Farm Agricultural Occupations In Appalachia*, School of Applied Sciences and Technology, Morehead State University, Morehead, Kentucky.

Griffin, Warren L., *The Nature of Agricultural Occupations, Other than Farming, in Saline County, Missouri*, Volume 65, Number 32, Education Series, Number 91, University of Missouri, Office of Publications, Columbus, Missouri, November 16, 1964.

Hoover, Norman K., Handbook of Agricultural Occupations. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963.

Hoover, N. K., D. R. McClay, and G. Z. Stevens, Technical Education Needs of Persons Engaged in Agricultural Occupations, A Preliminary Report of the Pennsylvania Study of Agricultural Occupations, Department of Agricultural Education, The Pennsylvania State University, University Park, Pennsylvania.

Judge, Homer V., Employment Opportunities and Needed Competencies In Off-Farm Agricultural Occupations In Massachusetts, School of Education, University of Massachusetts, Amherst, June,1965.

Kahler, Alan Arnold, Competencies in Agriculture Needed by Males Employed In Retail Farm Machinery Distribution, Department of Education, Iowa State University of Science and Technology, Ames, Iowa.

Mondart, C. L., and C. M. Curtis, Occupational Opportunities and Training Needs for Non-Farm Agricultural Jobs in the Metropolitan Areas of Louisiana, Department of Vocational Agricultural Education, School of Vocational Education, College of Agriculture, Louisiana State University, Baton Rouge, February, 1965.

Phipps, Lloyd J., and Others, Technical Education in and for Rural Areas, Preliminary Report No. 1, Technicians and Other Workers Who Need Technical Knowledge, Vocational and Technical Education Department, College of Education, University of Illinois, June, 1964.

The National Center for Advanced Study and Research in Agricultural Education, Report of Research Coordination Conference on Agricultural Occupations, The Ohio State University, Columbus, Ohio, 1963.

The National Center for Advanced Study and Research in Agricultural Education, Report of the Second Research Coordination Conference on Agricultural Occupations, The Ohio State University, Columbus, Ohio, 1964.

Tom, Frederick K. T., Charles W. Hill, and Kingsley L. Greene, Employment Opportunities Related to Farming in the Syracuse, New York, Economic Area, New York State College of Agriculture, Cornell University, Rural Education Department, Agricultural Education Division, Ithaca, New York, June, 1961.

Vocational and Technical Education for Off-Farm Occupations, Research Summarization of State Surveys of Persons Employed in Off-Farm Occupations Needing Competencies in Agriculture, Center for Vocational and Technical Education, The Ohio State University, May, 1965.

APPENDIX A

Louisiana State University
College of Agriculture
Department of Agricultural Education
Baton Rouge, Louisiana

Interviewer____________________

Date of Interview_______________

CONFIDENTIAL

Pre-Employment and Continuing Educational Needs of Persons Engaged in Off-the-Farm Agricultural Occupations in Selected Areas of Louisiana

Form I

Firm Number______________________Occupational Family______________________

I. Name of Business or Service____

II. Address_______________________Town__________________________________

III. Person Interviewed____

Position____

IV. Estimated per cent gross income that is agriculturally oriented______

V. Major agricultural products and/or functions of business or service

____

____

VI. Employees in this business or service (Total Number)_______________

A. For employees needing competencies in agriculture, complete the following:

		Number of Employees			
		Presently		Five Years Hence	
	Existing Job Titles	Full-Time	Part-Time	Full-Time	Part-Time
1.					
2.					
3.					
4.					

Form I (Cont'd)

		Number of Employees			
		Presently		Five Years Hence	
	Existing Job Titles	Full-Time	Part-Time	Full-Time	Part-Time
5.	____________	______	______	______	______
6.	____________	______	______	______	______
7.	____________	______	______	______	______
8.	____________	______	______	______	______
B.	Anticipated New Job Titles				
1.	____________	______	______	______	______
2.	____________	______	______	______	______
3.	____________	______	______	______	______
4.	____________	______	______	______	______

Fill out a separate Form II for each job title listed above.

Louisiana State University
College of Agriculture
Department of Agricultural Education
Baton Rouge, Louisiana

Interviewer____________________

Date of Interview_____________

CONFIDENTIAL

Pre-Employment and Continuing Educational Needs of Persons Engaged in Off-the-Farm Agricultural Occupations in Selected Areas of Louisiana

Form II

Firm Number________Occupational Family________Level of Employment________

I. Name and Address of Firm____

____

II. Job Title____

III. Number of workers in this Job Title

Full-Time__________________________Part-Time__________________________

IV. Anticipated Number of workers Five Years Hence

Full-Time__________________________Part-Time__________________________

V. Average Age_______Minimum for Entry_______Maximum for Entry_________

VI. Wages or Salary Per Month: (Beginning - Maximum - Present)

1.______150-200
2.______201-250
3.______251-300
4.______301-350
5.______351-400
6.______401-450
7.______451-500
8.______501-550
9.______551-600
10.______601-650
11.______651-700
12.______701 and above

VII. Activities and Duties of Persons with this Job Title (Detail)

____

____

____

____

____

____

VIII. Agricultural competencies with which worker must be familiar to do job

A. Area: Animal Science

Necessary	Desirable	Not Necessary	
______	______	______	1. Breeding Farm Animals
______	______	______	2. Livestock Feeding and Nutrition
______	______	______	3. Sanitation, Disease and Parasite Control
______	______	______	4. Housing and Equipment
______	______	______	5. Management
______	______	______	6. The Dairy Manufacturing Industry
______	______	______	7. Processing
			______ Packing Plants ______ Creameries ______ Poultry Processing ______ Butchering
______	______	______	8. Marketing
			______ Packing Plants ______ Creameries ______ Poultry Processing Plants ______ Livestock Auctions

B. Area: Plant Science

______	______	______	9. Propagation
______	______	______	10. Soils and Ferilization
______	______	______	11. Control of Insects_____ Diseases_____ Weeds_____
______	______	______	12. Management
______	______	______	13. Production of Ornamental Plants
______	______	______	14. Landscaping
______	______	______	15. Ginning
______	______	______	16. Warehousing

B. Area: Plant Science (cont'd)

Necessary	Desirable	Not Necessary	
			17. Processing (food, seed, grain, etc.)
			18. Marketing
			19. Forestry

_______ Establishing a Stand
_______ Hardwood Control
_______ Fire Control
_______ Estimating and Grading
_______ Disease Control
_______ Insect Control
_______ Harvesting
_______ Marketing
_______ Manufacturing
_______ Pulp Wood

C. Area: Agricultural Business Management and Marketing

Necessary	Desirable	Not Necessary	
			20. Records and Accounts, Budgeting and Analysis
			21. Agricultural Financing, Credit and Insurance
			22. Farm Organization and Management
			23. Labor Management
			24. Marketing Problems and Practices
			25. Agricultural Policy
			26. Agricultural and Related Price Analysis
			27. Cooperatives and Business Organizations

D. Area: Agricultural Mechanics and Automation

Necessary	Desirable	Not Necessary	
			28. Farm Power and Machinery
			29. Farm Buildings and Conveniences
			30. Farm Electrification and Processing
			31. Soil and Water Conservation

D. Area: Agricultural Mechanics and Automation (cont'd)

Necessary	Desirable	Not Necessary	
_____	_____	_____	32. Farm Shop (welding, plumbing, etc.)
_____	_____	_____	33. Farm Construction and Maintenance

E. Other Agricultural competencies that are needed for this Job Title____________________________________

____

____

____

IX. Educational Level Desired for Job Titles (Check only one)

_____ 1. Less than High School Graduate

_____ 2. High School Graduate

_____ 3. Post High School Technical Education

_____ 4. Some College

_____ 5. College Degree (Baccalaureate)

_____ 6. Master's Degree

_____ 7. Doctor's Degree

_____ 8. No Preference

X. Residential Background (Check only one)

_____ 1. Farm

_____ 2. Rural, nonfarm

_____ 3. Urban

_____ 4. No Preference

XI. Farm Experience

_____ 1. On a commercial farm

_____ 2. On a noncommercial farm

_____ 3. No Preference

XII. Experience Desired to Enter this Job Title________________________

____

____

XIII. Limitations on Entering this Job Title

A. Licensing or Certification

_____ 1. Professional

_____ 2. Industrial

_____ 3. Civil Service

B. Labor Law Restrictions________________________

____

C. Labor Union Restrictions________________________

____

D. Other (specify)________________________

____

XIV. Education Required to Advance in this Job Title

A. Technical short course or training provided by:

_____ 1. Your firm or the industry as a whole

_____ 2. On-the-job training

_____ 3. Public school (adult education)

_____ 4. A vocational school

_____ 5. An agricultural college

_____ 6. None

APPENDIX B

IBM Code Sheet

Form I

IBM Column Number	
1 - 4	Firm Number
5	Occupational Family
6 - 7	Town
8 - 9	Parish
10	Area
11 - 13	% Gross Income
14 - 16	Total Number of Employees
17 - 18	Number Job Titles
19 - 21	Number Needing Agricultural Competencies
22 - 23	Number Anticipated New Job Titles

Form II

IBM Column Number	
1 - 4	Firm Number
5	Occupational Family
6	Level of Employment
7 - 8	Job Title
9 - 10	Number Workers (Now) Full-Time
11 - 12	Number Workers (Now) Part-Time
13 - 14	Number Workers (5 years) Full-Time
15 - 16	Number Workers (5 years) Part-Time
17 - 18	Average Age
19 - 20	Minimum Age
21 - 22	Maximum Age
23 - 24	Beginning Wage
25 - 26	Present Wage
27 - 28	Maximum Wage
29 - 61	Agricultural Competencies
62	Other Agricultural Competencies
63	Educational Level
64	Residential Background
65	Farm Experience
66	Professional
67	Industrial
68	Civil Service
69	Labor Law Restrictions
70	Labor Union Restrictions
71	Other Limitations
72	Your Firm
73	On The Job
74	Adult Education
75	Vocational School
76	Agricultural College
77	None
78 - 80	Vocational Agricultural Education Form II

APPENDIX C

STATE SUMMARY--JOB TITLES

I. FARM MACHINERY SALES AND SERVICE

1. Professional
    - Irrigation Engineer
    - Asst. Irrigation Engineer
    - Designing Engineer
    - Asst. Designing Engineer
    - Research Engineer
    - Plant Research Engineer
    - Field Research Engineer
    - Asst. Plant Research Engineer
    - Asst. Field Research Engineer
    - Plant Production Engineer
    - Asst. Plant Production Engineer
    - Research Draftsman
    - Asst. Research Draftsman

2. Technical

3. Managerial
    - General Manager
    - Sales Manager
    - Business Manager
    - Parts Manager
    - Service Manager
    - Manager
    - Office Manager
    - Asst. General Manager
    - Asst. Manager
    - President
    - Asst. Parts Manager
    - Vice President
    - Truck Manager
    - Shop Manager
    - Used Car Manager
    - Credit Manager
    - Owner-Manager-Salesman
    - Owner
    - Materials Manager
    - Owner Manager
    - Warehouse Manager
    - Asst. Warehouse Manager
    - Store Manager & Shop Foreman
    - Asst. Manager & Salesman
    - Branch Manager
    - Manager-Salesman
    - President-Manager
    - V. President-Manager
    - Co-Owner-Manager
    - President-Research Engineer
    - V. Pres-Sales Manager
    - Asst. Sales Manager
    - Secretary-Treasurer

4. Supervisory
    - Shop Foreman
    - Parts Foreman
    - Foreman-New Equipment
    - Foreman-Repairs
    - Foreman-Warehouse & Assembly
    - Shop Superintendent
    - Shop Supervisor
    - Demonstrator of Cane Equipment
    - Plant Production Foreman
    - Asst. Plant Production Foreman

5. Sales
    - Salesman
    - Sales Clerk
    - Truck Salesman
    - Parts Salesman
    - Manufacturer's Agent
    - Farm Equipment Salesman
    - Outside Salesman
    - Sales Representative
    - Stock Control Clerk
    - Shipping & Receiving Clerk

I. FARM MACHINERY SALES AND SERVICE (continued)

6. Office

Clerk
Bookkeeper
Posting Clerk
Office Secretary
Office Helper
Bookkeeper & Asst. Manager
Office Clerk
Accountant
Secretary-Bookkeeper
Asst. Bookkeeper
Asst. Secretary

7. Skilled

Mechanic
Truck Mechanic
Serviceman
Tractor & Machine Mechanic
Parts Man
Farm Equipment Mechanic
Welder
Welder Repairman
Painter
Cotton Picker Mechanic
Roving Mechanic
Small Engine Repairman
Mechanic & Partsman
Service-Repairman
Asst. Partsman
Machinist
Bodyman
Mechanic & Truck Driver
Drill Press Operator
Fitter
Welder-Painter

8. Semiskilled

Truck Driver
Mechanic Helper
Warehouseman
Assemblyman
Shop Worker
Welders Helper
Pickup Man
Deliveryman
Setup & Deliveryman

9. Unskilled

Porter
Common laborer

II. FARM SUPPLIES AND EQUIPMENT

1. Professional

Plant Breeder
Engineer
Horticulturist
Forester
Agronomist
Nutritionist
Pharmacist
Entomologist

2. Technical

Seed Analyser
Herdsman
Chemist
Lumber Grader
Pilot
Chief Designer Engineer
Mechanical Engineer
Gin Electrician
Field Technician
Ammoniator

3. Managerial

Manager
Store Manager
General Manager
Treasurer
Shop Manager
Department Manager
District Manager
Horticulture Department Manager

II. FARM SUPPLIES AND EQUIPMENT (continued)

3. Managerial (cont.)

Division Manager
Plumbing & Welding Dept. Mgr.
Asst. Parts Manager
Personnel Manager
Branch Manager
Manager Trim Dept.
President
Secretary-Treasurer
Production Manager
Plant Dept. Manager
Division Manager
Service Manager
Plant Manager
Manager-Owner
Grocery Manager
Asst. Manager
Department Manager
Sales Manager
Farm Store Manager
Parts Manager
Manager Farm Department
Office Manager
Produce Manager
Market Manager
Vice President
Treasurer
Traffic Manager
General Manager, Co-Owner
Asst. Manager-Bookkeeper
Store Manager-Yard Foreman
Manager, Co-Owner-Clerk
Asst. Mgr., Co-Owner-Clerk
Office & Warehouse Manager
Owner Mgr.-Cotton Buyer
Co-Manager
Mill Manager
Poultry Operator Mgr.
Yard Manager
Asst. Yard Manager
President-Owner
Egg Plant Manager
Station Manager
Paint Dept Manager
Credit Manager
Farm Advertising Manager
Owner-Operator
Manager Bookkeeper
Elevator Manager
President-Manager
L. P. Gas Sales Manager
Firm Manager
Owner-General Manager
Warehouse Manager

4. Supervisory

Fertilizer Superintendent
Mill Foreman
Dept. Supervisor
Foreman, Supt.
Warehouse Supervisor
Yard Supt.
Mill Supt.
Warehouse Supt.
Shop Foreman
Erection Foreman
Asst. Plant Supt.
Woods Foreman
Superintendent
Plant Supervisor
Seed-Dryer Supervisor
Yard Foreman
Foreman
Wrecking Foreman
Planner Foreman
General Foreman
Shop Superintendent
Warehouse Foreman
Gin Repair Foreman
Carpentry Foreman
Scale Crew Foreman
Station Supervisor
District Supervisor
Service Supervisor
Plant Foreman
Fertilizer & Lime Supt.
Feed, Seed & Garden Supt.
Tool Dept. Supt.
Plant Superintendent
Production Foreman
Working Foreman
Broiler Serviceman
Feed Room & Mixer Foreman
Asst. Foreman
Crew Leader

II. FARM SUPPLIES AND EQUIPMENT (continued)

5. Sales

Salesman
Sales Clerk
Sales Lady
Sales Girls
Outside Salesman
Telephone Salesman
Farm Store Salesman
Purchasing Agent
Sales Correspondent
Inside Salesman
Buyer
Livestock Sales Consultant
Farm Pharmaceutical Buyer
Lumber Buyer
Agricultural Salesman
Counterman
Store Clerk
Sales Representative
Field Salesman & Service Man
Commission Agent
Clerk-Deliveryman
Contact Salesman
Secretary Treasurer & Clerk
Gas Salesman
Road Salesman
Clerk Buyer
Nursery Clerk
Feed Buyer

6. Office

Bookkeeper
Chief Accountant
Shipping Clerk
Receiving Clerk
Secretary-Treasurer
Asst. Secretary
Office Employees
Service Clerk
Secretary
Clerk
General Clerk
Accountant
Stock Clerk
Cashier
Office Clerk
Clerk-Secretary
Clerk-Bookkeeper
Posting Clerk
Secretary & Bookkeeper
Receiving & Shipping Clerk
Asst. Bookkeeper

7. Skilled

Mechanic
Serviceman
Operator
Saddlemaker
Welder
Estimator
Home Improvement Consultant
Farm Service Man
Plant Operator
Mechanic Serviceman
Sheet Metal Mechanic
Butcher
Engine Mechanic (Gin)
Head Saw Cylinder Filer
Parts Man
Mixing Man
Tire Recapman
Small Engine Mechanic
Saw Mechanic
Lathe Operator
Miller
Machinist
Mix Operator
Fork Lift Operator
Packer Operator
Elevator Operator
Plumber (Farm)
Carburetor Mechanic
Pay Load Operator
Packing Line Operator
Feed Mixer

II. FARM SUPPLIES AND EQUIPMENT (continued)

8. Semiskilled

- Produce man
- Service Man
- Maintenance Man
- Asst. Seed Dryer
- Semiskilled Producers
- Repairman
- Poultry Service Man
- Truck Driver
- Warehouseman
- Assembly Man
- Deluxer
- Sheet Metal Mechanics Helper
- Asst. Warehouseman & Truck Driver
- Electricians Helper
- Engine Mechanics Helper
- Saw Shop Crewman
- Carpenter Crewman
- Scale Repair Crewman
- Gin Repair Crewman
- Butane Serviceman
- Butane Transport Driver
- Butane Delivery Man
- Egg Grader
- Fertilizer Plant Worker
- Maintenance Service Man
- Service & Repairman
- Assistant Butcher
- Millman
- Production Helper
- General Helper
- Elevator Helper
- Sack Hanger
- Sewing Machine Operator
- Feed Mixer
- Utility man

9. Unskilled

- Porter
- Yardman
- Laborer
- Warehouse Assistant
- Truck Helper
- Fence Erector
- Insulation Man
- Delivery Man
- Driver's Helper
- Plant Helper
- Service Station Attendant
- Stock Boy
- Dock Workers

III. LIVESTOCK AND POULTRY

1. Professional

- Bacteriologist
- Hog Specialist

2. Technical

- Field Man
- Inspector Grader
- Swine Expert
- Lab. Technician
- Lab. Sample Checker
- Herdsman
- Cattle Buyer
- U.S.D.A. Inspector
- Auctioneer
- Plant Engineer
- Ringman
- D.H.I.A. Tester

3. Managerial

- Plant Manager
- President
- Manager
- Asst. Manager
- Egg Dept. Manager
- Killing Floor Manager
- Owner Manager
- Beef Manager
- Production Manager
- Farm Manager
- Marketing Manager
- Produce Manager
- Market Manager
- Asst. Market Manager
- Frozen Food Manager
- Route Manager

III. LIVESTOCK AND POULTRY (continued)

3. Managerial (cont.)

Asst. General Manager
Retail Sales Manager
Branch Manager
Treasurer
Procurement Manager
Asst. Plant Manager
Milk Production Manager
Sales Manager
Vice President
Office Manager
General Manager
Southern Zone Manager
Asst. Office Manager
Egg Room Manager
Dairy & Poultry Manager
Personnel Manager
Wholesale Manager
Merchandise Manager
Secretary-Treasurer
Grocery Manager
Store Manager
Owner-Operator
Manager-Bookkeeper
Hatchery Manager
Feed Mill Manager
President-Manager
Field Manager
Processor & Sales Manager
Owner Livestock Buyer
Yard Manager
Asst. Manager & Salesman
Stock Manager
Farm Flock Manager
Co. Owner-Manager
Office Manager-Bookkeeper
Manager & Cattle Buyer
Assistant Yard Manager
Owner-Butcher

4. Supervisory

General Plant Superintendent
Plant Supervisor
Supervisor
Sales Supervisor
Milk Plant Supt.
Sausage Superintendent
Dairy Manufacturing Supt
Shipping Foreman
Plant Foreman
General Supervisor
Foreman
Shift Supervisor
Processing Foreman
Quality Control Supervisor
Sales Supervisor
Prod. Control Supervisor
Dairy & Poultry Supt.
Plant Supt.
Wholesale Supt.
Asst. Plant Supt
Supervisor
Department Supervisor
Plant Production Supt.
Manufacturing Supervisor
Route Supervisor
Ice Cream Plant Supt.
Milk Supervisor
Ice Cream Superintendent
Poultry Supervisor
Curing Foreman
Meat Curing Supervisor
Asst. Ice Cream Supt.
Milk Supt
Asst. Milk Supt.
Superintendent
Dock Foreman
Storeroom Supt.
Sausage Foreman
Meat Supt.
Retail Supt.
Sales Supt.
Asst. to Sales Supt.
Asst. Supervisor
Yard Foreman
Farm Supervisor
Hatchery Foreman
Pullet Program Foreman
Plant Maint. Supt
Raw Products Receiver
Asst. Shipping Supt.
Plant Superintendent
Mill Foreman

III. LIVESTOCK AND POULTRY (continued)

5. Sales

Salesman
Route Salesman
Purchasing Agent
Sales Lady
Beef, Lamb & Veal Salesman
Dairy & Poultry Salesman
Sales Clerk
Livestock Buyer
Merchandising Man
Routeman
Buyer
Sales Engineer
Outside Salesman
Precision Cut Salesman
Full Line Salesman
Merchandiser
Cattle Buyer
Hotel, Restaurant & Inst. Salesman
Produce Clerk
Market Clerk
Wholesale Routeman
Baby Chick Salesman
Hide & Wool Buyer
Feed Salesman

6. Office

Bookkeeper
Shipping Clerk
Office Worker
Ticket Writer
Secretary
Auditor
Receiving Clerk
Clerical Help
Cashier
Clerical Clerk
Clerk
Weightmaster
Stock Clerk
Accountant
Scale Man
Stenographer-Clerk
Weightmaster-Ticket Writer
Bookkeeper-Clerk
Check writer

7. Skilled

Meat Cutter
Asst. Herdsman
Rendering Operator
Meat Boner
Livestock Handler
Stockman
Processor (Beef)
Carpenter
Ice Cream Maker
Asst. Operator
Milk Tester
Butcher
Pasteurizer Operator
Steak Cutter
Bone Cutter
Grader Packer
Processor
Smoker
Auctioneer
Cheese Maker
Slaughter-Butcher
Disease Control Man
Creamery Worker
Butcher-Meat Cutter
Processor (Dairy)
Electrician
Short Time Operator
Raw Milk Pickup Man
Milk Purification Operator
Sausage Maker
Assorted & Inspector

8. Semiskilled

Maintenance Man
Milker
Cooler Man
Warehouseman
Plant Worker
Ring Man
Egg Candler
Service Man
Mixer Man
Laborer
Groundsman
Delivery Man

III. LIVESTOCK AND POULTRY (continued)

8. Semiskilled (cont.)

- Sausage Maker
- Butcher's Helper
- Poultry Processors
- Curer
- Slaughterer
- Processor
- Yardman
- Slaughterer, Packer & Peeler
- Truck Driver
- Order Packer
- Grader
- Candler & Grader
- Weight Master
- Sales Driver
- Load-Out-Man
- Produce Helper
- Meat Wrapper
- Packer (Dairy)
- Stock Man
- Egg Room Operator
- Farm Operator
- Trimmer
- Hatching Egg Handler
- Routeman's Helper
- Cattle Herder
- Egg Packer
- Sorter & Checker
- Egg Processor
- Weight Man

IV. CROPS, FORESTRY AND SOIL CONSERVATION

1. Professional

- State Forester
- Forester V
- Forester III
- Forester I
- Water Management Researcher
- Biochemist
- Director of Research
- Service Forester
- Range Researcher
- Asst. Engineer
- Asst. Forester
- Dept. Information Rep.
- Federal Inspector
- District Forest Supt.
- District Ranger
- Research Forester
- Soil Scientist
- Entomologist
- Plant Physiologist
- Asst. State Forester
- Forester IV
- Timber Management Researcher
- Wildlife Researcher
- Agronomist
- Public Relations
- Forester II
- Engineer
- Chemist
- Work Unit Conservationist
- Tropical Research Director
- Area Forest Supt.
- Unit Forester
- Agri-Commodity Supervisor
- Range Conservationist
- Asst. District Forester
- District Forester
- Forester
- Chief Forester
- Area Forester
- Forest Specialist
- Agricultural Engineer

2. Technical

- Electrician
- Investigator III
- Car Inspector
- Asst. Engineer
- Forest Technician
- Forest Ranger
- Candlers
- Inspector
- Tree Surgeon
- Enforcement Agent
- Lumber Inspector
- Farm Planner
- Quality Control Man
- Engineers Aid
- Cotton Mkt. Spec. Fieldman
- Cotton Classer

IV. CROPS, FORESTRY AND SOIL CONSERVATION (continued)

2. Technical (cont.)

Radio Technician
Technical Expert
Investigator II
Engineer
Chemist
Treating Technician
Graders
Cane Inspector
Practical Forester
Forestry Aid
Chief Engineer
Surveyor
Plant Engineer

3. Managerial

Manager Agriculture Dept.
General Sugar Mill Manager
Assistant Manager
Elevator Manager
Secretary-Treasurer
President
Field Manager
Business Manager
Production Manager
Gin Manager
Egg Farm Manager
Meat Manager
Forestry Manager
Land Manager
Transportation Manager
Truck Manager
General Field Manager
Manager
Traffic Manager
Executive Vice-President
Office Manager
Vice-President
Store Manager
General Manager
Plant Manager
Poultry Manager
Sales Manager
Produce Manager
Market Manager
Export Manager
Banana Department Manager
Egg Room Manager
Sec.,Treas., Gen. Mgr. & Cotton Buyer
General Manager-Cotton Buyer
Owner Manager
President-Co-Owner
Market Coordinator
President, General Manager
Asst. Manager-Bookkeeper
Secretary-Treasurer & Manager
Assistant Market Manager
Assistant Produce Manager
Planner Mill Manager
Assistant Store Manager
Co-Manager & Co-Owner
Manager Salesman
Manager Operator
Vice President Land Manager
Insurance Manager
Warehouse Manager
Feed Mill Manager
Grain Storage Manager
Trucks Manager
Fertilizer Manager
Assistant Office Manager
Manager President
Assistant Sales Manager
Owner
President Manager
Vice President-Assistant Manager
Vice President-General Manager
Secretary-Treasurer & Office Manager
Canal Manager
Drier Manager
Comptroller
Office Manager & Cotton Buyer
Territorial Manager

4. Supervisory

Foreman
Foreman III
Fabrication Superintendent
Assistant Superintendent
Erection Foreman
Superintendent Oil Mill
General Shipping Supervisor
Plant Foreman
Farm Superintendent
Wood Procurement Superintendent
Warehouse Superintendent
Foreman Lint Room

IV. CROPS, FORESTRY AND SOIL CONSERVATION (continued)

4. Supervisory (cont.)

- Plant Supervisor
- Quality Control Supt.
- Wood Marketing Foreman
- Warehouse Foreman
- Tree Surgeon Foreman
- Head Forestry Dept.
- Supervisor Warehouse
- Tree Nursery Supt. I
- Wood Yard Foreman
- Mill Superintendent
- Maintenance
- General Supt. of Mills
- Yard Foreman
- Foreman II
- Supervisor
- Superintendent
- Production Plant Supt.
- Asst. Shed Foreman
- Factory Superintendent
- Shed Supervisor
- Assistant Shed Supervisor
- Cresote Plant Superintendent
- Asst. Cresote Plant Supt.
- Field Foreman
- Asst. Woods Foreman & Truck Driver
- Const. & Maint. Supt.
- General Foreman of Roads & Grounds
- Herdsman Foreman
- Field Overseer
- Supervisor Transportation
- Tree Nursery Supt. II
- Gin Superintendent
- Plant Superintendent
- Repair Shop Foreman
- Elevation Supt.
- Logging Foreman
- Compress Superintendent
- Compress Asst. Supt. & Press Foreman
- Compress Labor Foreman
- Woods Foreman
- Mill Foreman
- Planer Mill Foreman
- Cross Tie Superintendent
- Shed Foreman
- Pulpwood Superintendent
- Green End Foreman
- Logging Superintendent
- Department Superintendent
- Millwright Foreman
- Log Contractor
- Shop Foreman
- Production Foreman
- Production Supervisor
- Line Supervisor
- Dry Kiln Foreman
- Shipping Foreman

5. Sales

- Salesman
- Buyer
- Sales Representative
- Food Clerk
- Broker
- Trader
- Merchant
- Dairy Clerk
- Produce Buyer
- Auctioneer
- Asst. Sales Manager
- Cane Buyer
- Sweet Potatoe Buyer
- Rice Buyer-Grader
- Timber Buyer
- Pole Buyer
- Rice Buyer
- Seed Buyer
- Sales Clerk
- Cotton Buyer
- Sales Manager

6. Office

- Time Keeper
- Clerk
- Chief Clerk
- Seed Checker & Weigher
- Shipping Clerk
- Secretary-Treasurer
- Cashier
- Grain Checker & Weigher
- Admin. Officer
- Asst. Shipping Clerk
- Shipping Clerk & Bookkeeper
- Shed Clerk
- Clerk Weigher
- Weigher & Bookkeeper

IV. CROPS, FORESTRY AND SOIL CONSERVATION (continued)

6. Office (cont.)

Typist-Clerk
Cane Weigher
Payroll Clerk
Office Worker
Secretary
Bookkeeper
Office & Shipping Clerk
Weigher
Receipt Writer
Check Writer
Ticketman & Cotton Weigher
Recorder Clerk
Bookkeeper & Sample Man
Asst. Bookkeeper
Shipping Clerk
Accountant
Invoice Clerk
Clerk & Warehouseman
General Clerk
Shipping & Storing Clerk

7. Skilled

Cavity Man
Derrick Operator
Sugar Boiler
Forest Ranger I
Forest Ranger II
Forest Ranger III
Cabinet Maker
Heavy Equipment Operator
Egg Candler
Forest Ranger
Partsman
Ginner
Press Operator
Meat Cutter
Butcher
Draftsman
Trimmer
Refinery Mechanic
Clarifier Operator
Mechanic
Gin Operator
Standman
Forest Foreman
Radio Operator
Fill Operator
Carpenter
Welder
Lookout Man
Ranger
Electrician
Horse Trainer
Presser
Edgeman
Millwright
Sawyer
Cutup Man
Sheet Metal Mechanic
Box Setter
Weigher
Maintenance Man
Loader Operator and Wood Scaler
Treating Engineer
Loader Operator
Gang Sawyer
Saw Filer
Kiln Operator
Shop Mechanic
Machine Man (Planer Mill)
Machine Feeder
Lumber Grader
Lumber Checker
Sawyer & Filer
Planer Machine Operator & Mechanic
Maintenance Man
Okra Slicer Operator
Timber Market Estimator
Rice Dryer Operator
Syrup Mill Operator
Grain Inspector
Fireman
Hydrofunic House Worker
Lathe Operator
Verneer Clipper Operator
Splicer Operator
Dry Kiln Operator
Veneer Breaker
Power Saw Operator
Gin Mechanic
Log Skidder
Tow Motor Operator
Millwright & Sawyer
Lumber Setter
Plywood Grader
Crane Operator
Machinist
Welder Mechanic
Process Inspector
Field Man (Agricultural)
Head Miller
Bin Man
Receiver-Shipper (Rice Dryer)

IV. CROPS, FORESTRY AND SOIL CONSERVATION (continued)

8. Semiskilled

Climber
Forest Foreman I
Forest Foreman II
Forest Foreman III
Tractor Operator
Forest Fireman
Maintenance Helper
Poultry Processor
Lift Truck Operator
Log Scaler
Welder Helper
Mill Employees
Gin Stand Worker
Candler
Horse Training Helper
Truck Driver
Forest Towerman I
Forest Towerman II
Fire Guard
Packer-Shipper
Forest Towerman
Tree Trimmer
Feed Miller
Crawler Driver
Asst. Ginner
Warehouseman
Tower Man II
Weigher
Pumper
Crew Leader
Utility Man
Seed Weigher
Elevator Operator
Skidway Man
Tractor Driver & Loader
Scaleman
Blower
T.S.I. Crewman
Fork Lift Operator
Mill Laborer
Asst. Dryer Operator
Oilers
Miller Maintenance
Feed Mill Operator
Seed Cleaner & Delinter Operator
Cane Grinder
Cane Juice Carrier
Cane Juice Drainer
Skimmer
Syrup Cooker & Fireman
Pole & Pile Peeler
Scaler Helper
Mechanic Helper
Laborer
Saw Filer Helper
Log Lifter
Debarker Operator
Fireman
Press Crew Worker
Carman
Laborer Utility
Chipper Operator
Resaw Operator
Handy Man
Grader-Packer
Grader
Meat Wrapper
Relief Man
Commodity Aids
Bench Saw Operator
Plane Operator
Lumber Handler
Forester Aid
Cotton Sample Weigher
Edger
Log Tripper
Peach Packer
Cane Sampler
Operators Helper
Deliveryman
Road Maintenance Crew Laborer
Sawman
Asst. Miller
Packing Crew
Canal Walkers

9. Unskilled

Groundsman
Yardman
Block Setter
Trade Helper
Field Worker
Cotton Picker (hand)
Suction Feeder
Syrup Mill Worker
Produce Trimmer
Pulp Loader
Woods Crew
Warehouseman
Laborer
Porter
Yard Laborer
Tree Planter
Feed Mill & Grain Elevator Worker
Weeder-Grader
Cotton Loader

V. ORNAMENTAL HORTICULTURE

1. Professional
    - Landscape Architect
    - Entomologist
    - Landscape Draftsman
    - Landscape Specialist

2. Technical
    - Florist

3. Managerial
    - Manager
    - Nursery Manager
    - Asst. Manager Retail Sales
    - Small House Plant Manager
    - Office Manager
    - Sales Manager
    - President
    - Asst. Manager
    - Manager Retail Sales
    - Manager Chem. & Fert. Dept.
    - Nursery Stock & Trees Manager
    - Nursery Farm Manager
    - Sales Lot Manager
    - Owner-Manager
    - Vice President
    - Manager Grower
    - Co-Manager & Owner

4. Supervisory
    - Foreman
    - Nursery Foreman
    - Landscape Foreman
    - Field Foreman
    - Job Foreman
    - Sales Supervisor
    - Supervisor
    - Greenhouse Foreman
    - Lot & Landscape Foreman
    - Plant Supervisor

5. Sales
    - Salesman
    - Dispatcher
    - Lot Salesman
    - Sales Clerk
    - Landscape Salesman
    - Designer Salesman

6. Office
    - Clerk
    - Bookkeeper
    - Secretary-Treasurer
    - Office Worker
    - Telephone Clerk

7. Skilled
    - Floral Designer
    - Propagator
    - Designer
    - Mechanic
    - Asst. Designer
    - Flower Arranger
    - Asst. Floral Designer
    - Tree Surgeon
    - Budder-Cutter

8. Semiskilled
    - Potter
    - Planter
    - Grower
    - Tractor Driver
    - Apprentice Designer
    - Nurseryman
    - Truck Driver
    - Landscape Gardener
    - Serviceman
    - Digger
    - Pinner
    - Florist Helper
    - Tree Surgeons Helper

9. Unskilled
    - Laborer
    - Yard Boy
    - Apprentice
    - Landscape Laborer
    - Greenhouse Attendant
    - Stable Workman
    - Delivery Boy
    - Gardener
    - Nursery Helper
    - Yardman
    - Potter

VI. WILDLIFE AND RECREATION

1. Professional
    - Curator
    - Horticulturist
    - Biologist
    - Commissioner
    - Wildlife Biologist
    - Research & Educational Personnel
    - Fish Biologist

2. Technical
    - Biologist Aid
    - Waste Disposal Inspector

3. Managerial
    - Manager
    - Asst. Superintendent
    - Asst. Manager
    - General Manager
    - Superintendent
    - Park Superintendent
    - Golf Course Manager
    - Wildlife Manager
    - Refuge Manager
    - Owner-Manager
    - Asst. Manager & Salesman

4. Supervisory
    - Park Ranger
    - Superintendent
    - Asst. Superintendent
    - Tree Supervisor
    - Supervisor
    - Golf Course Superintendent
    - Area Supervisor
    - Foreman
    - Greens Supt.
    - Landscape Supervisor
    - Parkway Foreman
    - Recreation Area Supervisor
    - Fishery Foreman
    - Wildlife Agent
    - Area Supervisor
    - District Supervisor
    - Game Warden
    - Supt. of Parks & Recreation
    - Park Supervisor
    - Refuge Supervisor

5. Sales

6. Office
    - Refuge Clerk

7. Skilled
    - Taxidermist
    - Operator
    - Chief Greenskeeper
    - Mechanic
    - Bulldozer Operator
    - Heavy Equipment Operator

8. Semiskilled
    - Maintenance Man
    - Gardener
    - Asst. Greenskeeper
    - Equipment Operator
    - Greenskeeper
    - Truck Driver
    - Minnow Feeder
    - Fish Farm Helper

VI. WILDLIFE AND RECREATION (continued)

9. Unskilled

Park Attendant
Groundskeeper
Fairway Keeper
Asst. Greenskeeper
Kennel Man
Golf Course Employee
Laborer
Caretaker
Seine Man

VII. FARM SERVICE

1. Professional

Mechanical Engineer
Chemist Bacteriologist
Public Relations
Farm News Director
FHA Supervisor
Agri. Engineer
State Director
Engineer
Asst. Loan Specialist
Home Economist
Radio Farm Director
Farm Management Supervisor
Field Engineer
Research Director
County Supervisor
Home Service Advisor
Executive Secretary
Work Unit Supervisor
Entomologist
Administration Officer
Loan Specialist
Farm Management Officer
Loan Officer
Supervisor
Agri. Advisor
Appraiser
Home Service Engineer
Asst. County Supervisor
Electrical Engineer
District Sales Manager

2. Technical

Laboratory Asst
Service Technician
Pest Control Technician
Management Technician
Milk Technician
Inspector
Livestock Board Inspector
Airplane Pilot
Plant Cover Technician
Pilot
Survey Asst
Advisor
Draftsman
Sanitarian
Radio Breaker & Utility Maint. Man
Meter & Utility Maint. Man
Artificial Inseminator
Breeding Technician

3. Managerial

Manager
Asst. Manager
Sales Manager
Branch Manager
Vice President
Senior Vice President
Pest Control Division Manager
Secretary-Treasurer
President
Division Manager
General Manager
District Manager
Office Manager
Termite Division Manager
Credit Manager
Manager Operator
Owner Asst Manager
Asst. Branch Manager
Office Manager & Secretary Treasurer
Farm Loan Manager
Manager Pilot
Manager Welder
Treasurer-Office Manager
Manager Mechanic
Co. Manager
Asst. Manager Accountant
President & Manager
Manager & Insurance Agent

VII. FARM SERVICE (continued)

3. Managerial (cont.)

- Regional Manager
- Owner-Manager
- Plant Manager
- Engineer Manager
- Agency Manager

4. Supervisory

- Supervisor
- Shop Foreman
- Pest Control Supervisor
- Machinist Foreman
- Foreman
- Termite Dept. Head
- Field Supt.
- Installation Supervisor
- Line Supt.
- Service Supervisor
- Irrigation Supervisor
- Plant Supervisor
- Spray Supervisor
- Asst. County Supervisor
- Field Representative
- Enforcement Agent
- Construction Line Foreman
- Business Supervisor
- District Supervisor
- Termite Supervisor
- Performance Supervisor
- Asst. Shop Foreman

5. Sales

- Salesman
- Real Estate Agent
- Advertising Salesman
- Routeman
- Insurance Salesman
- Service Agent
- Counter Salesman
- Purchasing Agent
- Power Use Manager & Public Rel.

6. Office

- Office Worker
- Chief Brand Clerk
- Office Clerk
- Office Asst.
- Secretary
- Bookkeeper
- Clerk
- Clerical Asst.
- Office Secretary
- Clerk-Secretary
- Stock Clerk
- Checker
- Treasurer
- Asst. Cashier
- Cashier
- Shipping Clerk
- Bookkeeper-Dispatcher
- Steno-Clerk
- Accountant II, Transportation Clerk
- Work Order Clerk
- Warehouse Clerk
- Accountant I
- Accountant III-Billing Clerk
- Asst. Bookkeeper
- Secretary-Bookkeeper
- Dispatcher
- Claims Adjuster

7. Skilled

- Operators
- Mechanic
- General Pest Treater
- Machinist
- Well Serviceman
- Welding Operator
- Truck Press Operator
- Blacksmith
- Serviceman
- Carpenter
- Tree Surgeon
- Reporters
- Gin Repairman
- Bulldozer Operator
- Construction Lineman
- Electrician
- Plumber
- Engineer
- Dragline Operator
- Sheet Metal Mechanic

VII. FARM SERVICE (continued)

7. Skilled (cont.)

- Lineman
- Machine Operator
- Welder
- Well Driller
- Driller
- Appliance Mechanic
- Machinest-Welder
- Cement Batch Operator
- Heavy Equipment Operator

8. Semiskilled

- Treater
- Pest Control Service Man
- Termite Service Man
- Welder Helper
- Well Driller Helper
- Machinist Helper
- Termite Treater
- Fieldman
- Tool Room Man
- Treater Helper
- Exterminator
- Warehouseman
- Scout II
- Painter
- Ground Crew
- Asst. Exterminator
- Termite Control Man
- Hay Crewman
- Applicator
- Tractor Operator
- Spreader Operator
- Caretaker
- Canal Walker
- Mill Operator
- Tree Pruner
- Carpenters Helper
- Meter Reader
- Form Setter
- Finisher
- Loader-Driver
- Floor Hand
- Mechanics Helper
- Apprentice Machinist
- Tree Climber

9. Unskilled

- Warehouse Helper
- Delivery Man
- Laborer
- Lineman Helper
- General Helper
- Service Asst.
- Electricians Helper
- Plumbers Helper
- Sheet Metal Helper
- Truck Drivers Helper

VIII. AGRICULTURAL SERVICE

1. Professional

- Research Agronomist
- Vocational Agriculture Teacher
- Vocational Agriculture Specialist
- Executive Assistant II
- Chief Anhydrous Ammonia Div.
- Director Weights & Measures
- Exec. Asst. Dept. of Agriculture
- Dir. Warehouse Commission
- Veterinarian
- Poultry Pathologist
- Pest Control Dist. Super.
- State Super. La. Market Comm.
- Asst. County Agent
- Agri. Marketing Ser. Area Supervisor
- Agri. Commodity Grader
- Asst. Commissioner of Agriculture
- Asst. Director Weights & Measures
- Director Sweet Potatoe Advertising
- Plant Entomologist
- State Entomologist
- Veterinary Pathologist
- Pest Control State Superintendent
- County Agent
- Assoc. County Agent
- Agri. Marketing District Supervisor
- State Dir. Voc. Agri. Education
- Professor of Agronomy
- Assoc. Prof. Animal Science
- Asst. Dir. Agri Research Ser.
- Plant Pathologist

VIII. AGRICULTURAL SERVICE (continued)

1. Professional (cont)

Chairman Agriculture Dept.
Assoc. Prof. Ag. Engineering
Dir. Agri. Research Service
Chemical Engineer
Research Forester
Forester
Party Leader
Hydraulic Engineer
Entomologist
Counselor
Research Plant Pathologist
Home Demonstration Agent
Agronomist
Livestock Director
Home Economics Teacher
Asst. Prof. of Horticulture
Assoc. Prof. of Horticulture
Asst. Prof. Poultry Science
State Admin. Officer
Agri. Engineer
Biologist
Asst. Agronomist
County Office Manager
Voc. Agri. Supervisor
Land Administrator II

Soil Scientist
County Manager
Agri. Economist
Geologist
Senior Counselor
Instructor
Chemist
Asst. Home Demonstration Agent
Animal Husbandry Man
Conservationist
Assoc. Prof. Dairy Science
Assoc. Home Demonstration Agent
Prof. of Horticulture
Forestry Consultant
Soil Conservationist
Civil Engineer
Work Unit Conservationist
Station Superintendent
Assoc. Prof. Agronomy
(In charge of Experiment Station)
Assoc. Prof. of Agronomy
Forester Admin. (Range)
Agric. Professor
Construction Engineer
Rice Breeder

2. Technical

Pest Control Technician
Veterinary Nurse
Livestock Inspector General
Sweet Potatoe Inspector
Milk Sampler & Weigher
Marketing Specialist
Anhydrous Ammonia Inspector
Herbicide Inspector
Junior Livestock Loan
Field Representative
Cotton Gin Specialist
Exhibit Technician
Soil Conservation Technician
Warehouse Examiner
Field Representative
Jr. Credit Examiner
Poultry Product Insp.
Fresh Fruit & Veg. Insp.
Pest Control Inspector
Draftsman
Civil Engineering Technician
Milk Technician

Grain Inspector
State Seed Analysis
Pest Controller
Soil Conservation Aid
Fats & Oil Specialist
Claim Specialist
Credit Examiner
Inspector
Poultry Grader
Horticluture Inspector
Pink Boll Worm Inspector
Conservation Technician
Agri. Research Technician
Cotton Market Specialist
Pink Boll Worm Quarantine Insp.
Customer Service Representative
Agri. Engineering Aid
New Business Representative
Districts Supervisors Aid
Asst. Forester
Soil Conservation Aid
Computer

VIII. AGRICULTURAL SERVICE (continued)

2. Technical (cont.)

Employment Security Tech.
Produce Inspector
Animal Disease Enforcement Officer
Livestock Inspector
Warehouse Examiner
Feed & Fertilizer Inspector
Research Aid
Engineering Aid
Farm Planner
Field Inspector
Apiary Inspector
Weight & Measure Inspector
Seed Technician

3. Managerial

Trust Officer
President
Loan Officer
Asst. Manager Livestock
Loan Department
Manager
Office Manager
Secretary-Treasurer
Senior Officer
Administrator
Senior Vice President
Asst. Vice President
Administration Officer
Vice President
Manager Livestock Loan Dept.
Asst. Administration Officer
Manager Agricultural Loans
County Office Manager
Department Manager
Storage Management Officer
Officer in Charge
Business Analysis
District Manager
Manager & Fieldman
Executive Vice President
Sales Manager
Asst. Manager
Owner Manager
Branch Manager
Asst. Office Manager
Asst. V. Pres. & Agric. Rep.
Equipment Manager
Asst. Cashier, Manager

4. Supervisory

Work Unit Supervisor
Fire Ant Supervisor
Farm Superintendent II
Area Supervisor
Field Supt.
Gulf Region Supervisor
Horticulture Foreman
Poultry Production Supervisor
Supervisor
Employment Security Supervisor
Performance Supervisor
Farm Supervisor
Horticulture Supervisor
Service Crew Foreman
County Supervisor
Farm Loan Supervisor
Dist. Fieldman
Field Supervisor
Field Representative
Asst. County Supervisor
Farm & Lab. Supervisor
Milk Technician Supervisor
Plant & Insect Inspector
Party Leader
Dist. Supervisor
Agric. Commodity Grader Super.
Asst. Farm Foreman
Superintendent

5. Sales

Liason Officer
Salesman
Market & Produce Buyer
Merchants
Routeman

VIII. AGRICULTURAL SERVICE (continued)

6. Office

- Secretary
- Clerk Typist
- Note Teller
- Milk Plant Auditor
- Collector
- Area Clerk
- Investigator
- Program Clerk
- Allotment Program Clerk
- Counter Clerk
- Administrative Clerk
- Receptionist
- Sugar Feed Grain Clerk
- Acerage Allotment Clerk
- Grain Market Reporter
- Milk Auditor
- Credit Examiner
- Clerk
- Asst. Cashier
- Auditor
- Chief Clerk
- Interviewer
- Farm Commodity Market Reporter
- Stenographer
- Conservation Program Clerk
- Soil Bank Clerk
- Bookkeeper .
- County Office Clerk
- Agri. Conser. Program Clerk
- Cashier
- Admin. Price Support Clerk
- Clerk IV
- Agri. Statistician
- Appraisers
- Sugar Clerk
- General Clerk
- Extension Secretary
- Filing Clerk
- Cotton Loan Clerk
- Performance Clerk
- Allotment & Marketing Quota Clerk
- C. A. & M. 2 Clerk
- Note Teller & Bookkeeper
- Asst. County Office Clerk
- Stock Clerk & Warehouseman
- Office Assistant

7. Skilled

- Auto Mechanic
- Plainometer Operator
- Surveyor
- Field Reporter
- Service Crewman
- State Cooperator
- Farm Mechanic
- Equipment Operator
- Asst. Farm Mechanic
- Heavy Machine Operator
- Industrial Service Operator
- Asst. to Engineering Aid

8. Semiskilled

- Veterinarian Helper
- Plant Pest Control Worker
- Veterinarian Asst.
- Kennel Helper
- Fire Ant Control Worker
- Grader
- District Aid
- Plumbers Helper
- Farm Laborer
- Dairy Laborer
- Student Farm Laborer
- Research Helper
- Pest Control Asst.
- Parts Man

9. Unskilled

- Laborer
- Kennel Man
- Grain Sampler
- Gardener
- Veterinarian Hospital Helper
- Janitor